



London. Illustrated April 14, 1906.

A HYBRID BIRD.

Edwin James

A
NATURALIST'S CALENDAR,
WITH
OBSERVATIONS IN VARIOUS BRANCHES
OF
NATURAL HISTORY;

EXTRACTED FROM THE PAPERS

OF THE LATE

Rev. GILBERT WHITE, M. A.

OF SELBORNE, HAMPSHIRE,

SENIOR FELLOW OF ORIEL COLLEGE, OXFORD.

NEVER BEFORE PUBLISHED.

L O N D O N :

PRINTED FOR B. AND J. WHITE, HORACE'S HEAD,
FLEET STREET.

1795.



ADVERTISEMENT.

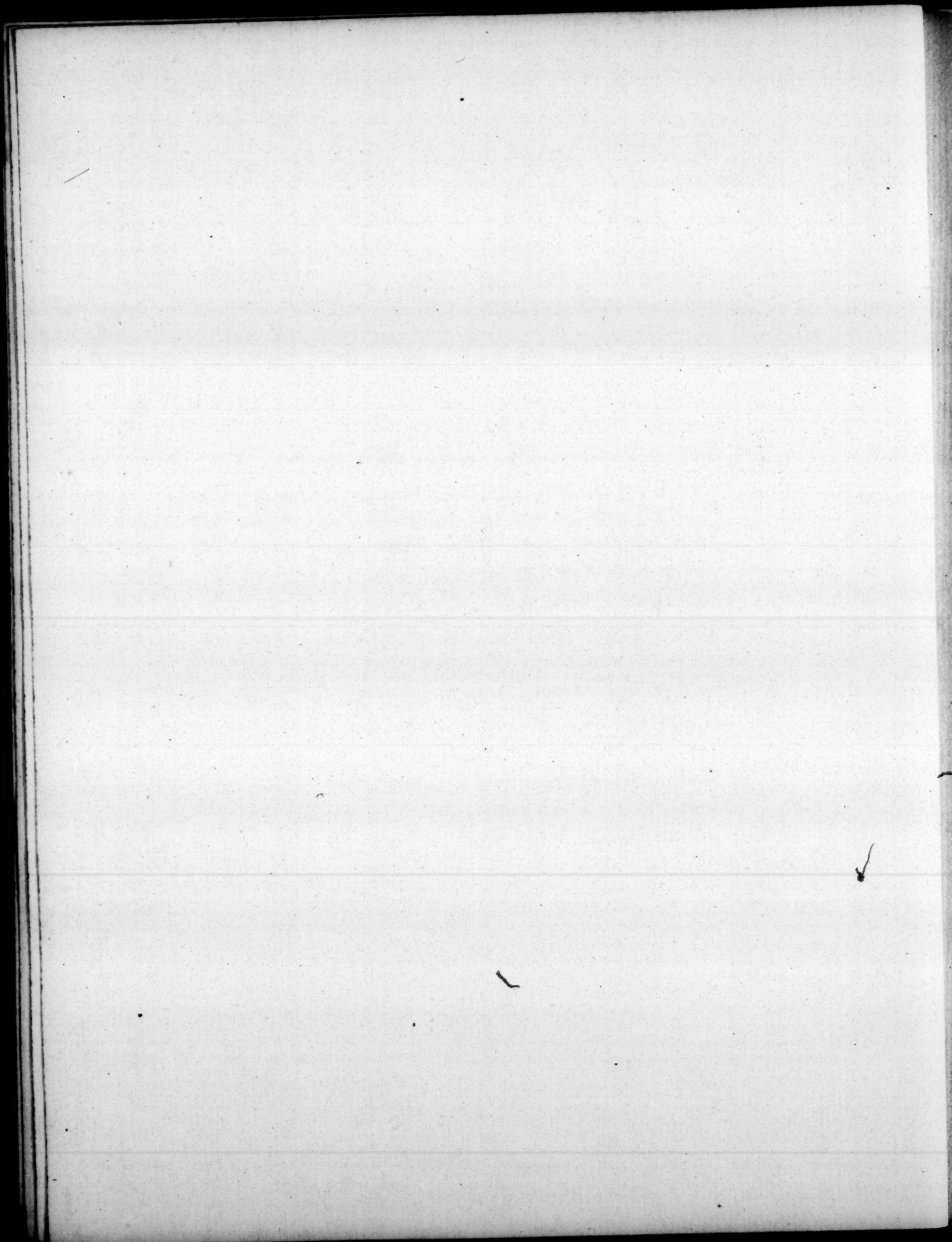
THE Reverend Mr. White, so agreeably known to the public by his *Natural History of Selborne*, left behind him a series of yearly books, containing his diurnal observations on the occurrences in the various walks of rural nature, from the year 1768 to the time of his death in 1793. From these annals he had already extracted all the matter comprized in the work above mentioned, down to the middle of 1787; but several curious facts in the preceding numbers had not been thus employed; and all the subsequent ones remained untouched. It was thought a mark of respect due to his memory, and to the reputation he had acquired as a faithful and elegant observer, not to consign these relicks

to neglect. The manuscripts were accordingly put into my hands for the purpose of selecting from them what might seem worthy of laying before the public. The present small publication is the fruit of my research. With no small pains I collected the materials of it, dispersed through the records of so many years, and gave them such an arrangement as I thought would present them in the most agreeable and useful manner to the lovers of natural knowledge.

J. AIKIN.

London, Jan. 1, 1795.

THE
NATURALIST'S CALENDAR.



THE
NATURALIST'S CALENDAR.

THE mode in which the following rural calendar of the year has been composed, was to copy out from the journals all the circumstances thought worthy of noting, with the several dates of their recurrence, and to preserve the earliest and latest of these dates; so that the calendar exhibits the extreme range of variation in the first occurrence of all the phenomena mentioned. To many of them only one date is annexed, only one observation having been entered. This is particularly the case with respect to the flowering of plants, with which the book of 1768 alone was copiously filled; and it is to be noted that this was rather a backward year.

Of

Of the abbreviations used, *fl.* signifies *flowering*; *l.* *leafing*; and *ap.* the first *appearance*.

Jan. 1—12.	Redbreast whistles
1—18.	Larks congregate
1—14.	Nuthatch chatters
1. Feb. 18.	Winter aconite fl.
2.	Shellefs snails ap.
2—11.	Grey and white wag- tails ap.
2—14.	Missel thrush sings
2. Feb. 14.	Helleborus foetidus (bears foot) fl.
2. April 12.	Polyanthus fl.
2. Feb. 1.	Double daisy fl.
3. Feb. 16.	Mezereon fl.
3.	Viola tricolor (pansie) fl.
3—21.	Lamium rubrum (red dead-nettle) fl.

Jan.

Jan. 3—15. Senecio vulg. (ground-
fel) fl.

3. Feb. 28. Hazel catkins open

4. Feb. 18. Hepatica fl.

5—12. Hedge sparrow whistles

5. Feb. 3. Flies in windows

6. Feb. 6. Large titmouse makes its
spring note

6—22. Song thrush or throftle
fings

6. Insects swarm under funny
hedges

6. April 7. Primula vulg. (primrose)
fl.

6. Mar. 19. Bees come out of their
hives

6. Feb. 3. Gnats play about

6—11. Hen chaffinches flock

8. Feb. 1. Ulex Europ. (gorse) fl.

B

Jan.

10 NATURALIST'S CALENDAR.

Jan. 8. April 1. *Chieranthus chieri* (wall
flower) fl.

8—12. Stocks fl.

9. *Emberiza alba* (bunting)
in great flocks

9. Linnets congregate in
vast flocks

9—11. Lambs begin to fall

10. Feb. 21. Rooks resort to their nest
trees

10. *Helleborus nigr.* fl.

10. Feb. 5. *Galanthis nival.* (snow-
drop) fl.

13. *Lamium alb.* (white dead-
nettle) fl.

13. Trumpet honeysuckle fl.

13. *Ranunculus repens*
(creeping crowfoot) fl.

14. House sparrows chirp

Jan.

NATURALIST'S CALENDAR. 11

Jan. 16. Mar. 11. *Leontodon taraxacum*
(dandelion) fl.

16. Mar. 24. Bat appears

16. Spiders shoot their webs

16. Butterfly ap.

16. Brambling ap.

17. Blackbird whistles

17. Wren sings

18. Feb. 8. Earth worms lie out

13. Mar. 18. *Crocus* fl.

21. Skylark sings

22. Ivy casts its leaves

22—24. *Helleborus hyemalis* fl.

23. *Scarabeus stercorarius*
(common dor or
clock) ap.

23. *Peziza acetabulum* ap.

23. Mar. 5. *Helleborus virid.* fl.

23. Feb. 1. Hazels show their female
blossoms

- Jan. 24. Feb. 21. Woodlark sings
24. Feb. 15. Chaffinch sings
25. Mar. 4. Jackdaws begin to come
to churches
25. April 14. Yellow wagtail ap.
25. *Lonicera Periclymenum*
 (honeysuckle) l.
27. Mar. 15. *Veronica agrestis* fl.
27. April 2. *Papilio urticae* (small tor-
toise-shell butterfly)
ap.
28. White wagtail sings
28. Feb. 24. Shell-snails ap.
30. Earthworms engender
Feb. 1. Mar. 26. *Fragaria sterilis* (barren
strawberry) fl.
1. *Parus caeruleus* (tomtit)
 makes its spring note
2. Brown wood owls hoot
3. Hens fit

Feb.

- Feb. 3. Marsh titmouse begins his
two harsh sharp notes
4. April 1. Gossamer floats
4. April 8. *Musca tenax* ap.
5. *Laurustinus* fl.
5. *Ruscus aculeatus* (butchers broom) fl.
7. Foxes smell rank
10. Turkey cocks strut and
gobble
12. Yellow hammer sings
13. April 2. *Papilio rhamni* (brimstone butterfly) ap.
13. Mar. 23. Green woodpecker
laughs
- 14—17. Ravens build
14. Mar. 27. *Taxus baccata* (male yew
tree) sheds its farina
15. Mar. 23. *Tussilago farfara* (coltsfoot) fl.

Feb.

- Feb. 16. Mar. 6. Rooks build
17. Partridges pair
17. Mar. 8. Pease sown
18. House pigeons build
20. Mar. 30. Field crickets open their
holes
21—26. *Pulex irritans* (common
flea) ap.
21. April 13. *Ficaria verna* (pilewort) fl.
21. April 5. Goldfinch sings
22. Mar. 26. *Coluber berus* (viper) ap.
23. April 1. *Oniscus asellus* (wood-
louse) ap.
24. Mistle thrushes pair
24. April 7. *Narcissus pseudo narcissus*
(daffodil) fl.
24. April 2. Willow fl.
25. Frogs croak
26. Mar. 31. *Viola odorata* (sweet vio-
let) fl.

Feb.

NATURALIST'S CALENDAR. 15

- Feb. 26. *Phalæna tinea vestianella*
ap.
27. April 24. *Charadrius ædicnemus*
(stone curlew) cl-
mours
27. Filbert fl.
27. April 5. Ringdove cooes
28. April 17. Apricot-tree fl.
28. Mar. 24. Toad ap.
28. Mar. 22. Frogs spawn
- Mar. 1. April 2. *Veronica hederifol.* fl.
2. April 17. Peach-tree fl.
2. April 6. *Rana temporar.* (frog)
ap.
3. *Thlaspi bursa past.* (shep-
herds purse) fl.
- 3—29. Pheasant crows
4. May 8. Land tortoise comes forth
4. April 16. *Pulmonaria officin.* (lung-
wort) fl.

Mar.

- Mar. 4. Podura fimetaria ap.
4. Aranea scenica faliens ap.
5—16 Scolopendra forficata ap.
5. April 25. Wryneck returns
5. Goose lays
5. Duck lays
6. April 18. Viola canina (dog violet) fl.
6. Papilio io (peacock butterfly) ap.
7—14. Trouts begin to rise
8. Beans planted
8. Blood-worms appear in the water
10. Crows build
10—18. Oats sown
12. April 30. Golden-crested wren sings
12. Populus tremula (aspen) fl.
13—20. Sambucus nigra (common elder) l.

Mar.

- Mar. 15. May 21. Laurel fl.
15. Chrysomela Gotting. ap.
15. April 22. Black ants ap.
16. Ephemeræ bifetæ ap.
17. April 11. Ribes Grossularia
(gooseberry) l.
17. May 19. Stellaria Holostea (stitch-
wort) fl.
17. April 22. Anemone nemorosa
(wood anemone) fl.
17. Blackbird fits
17. Raven fits
18—30. Wheat-ear returns
18. April 13. Adoxa moschatellina fl.
19. April 13. Small uncrested wren ap.
19. Fumaria bulbosa fl.
19. April 4. Ulmus campestris (elm)
fl.
19. April 7. Turkey lays
20. House pigeons fit.

C

Mar.

Mar. 20. April 14. *Caltha palustr.* (Marsh
Marigold) fl.

21. April 28. *Bombylus medius* ap.

21. April 12. Sand martin ap.

22.—30. *Coluber natrix* (snake)
ap.

22. April 18. *Formica Herculanea*
(horse ant) ap.

22. April 22. Green-finch sings

23. April 14. Ivy berries ripe

25. *Vinca minor* (periwinkle)
fl.

25. April 1. *Daphne Laureola* (spurge
laurel) fl.

26. April 20. Swallows ap.

26. May 4. Blackcap whistles

27. Ducks hatched

27. April 9. *Chrysosplenium opposi-*
tifol. fl.

28. May 1. House Martin ap.

Mar.

- Mar. 28. April 13. Chimney swallow ap.
 29. April 22. Double hyacinths blow
 29. Young goslings.
 30. April 22. Oxalis Acetosella (wood
 forrel) fl.
 30. April 17. Ring Ouzel ap.
 31. April 20. Barley sown
 April 1. May 1. Nightingale sings
 1. May 4. Fraxinus excels. (Ash) fl.
 1. Spiders' webs on the sur-
 face of the ground
 2.—24. Fritillaria Meleagris fl.
 2. Julus terrestr. ap.
 3.—24. Primula veris (Cowslip)
 fl.
 3.—15. Glecoma hederacea
 (Ground ivy) fl.
 3. Snipe pipes
 3. Buxus (Box-tree) fl.
 3. Ulmus campestr. (Elm) l.

- April 3.—14. Gooseberry fl.
3.—5. Currant fl.
3. May 21. Pear-tree fl.
4. Lacerta vulg. (Newt or
Eft) ap.
5.—19. Mercurialis perenn.
(Dog's Mercury) fl.
5. Ulmus glabra fl.
6.—20. Cardamine pratensis
(ladies smock) fl.
7.—26. Cuckow heard
7. May 10. Prunus spinosa (Black
thorn) fl.
7. Termes pulfatorius beats
7. Gudgeon spawns
8.—28. Rutililla (red start) ap.
8.—24. Fritillaria imper. (crown
imperial) fl.
9.—19. Tit lark sings
10. May 8. Fagus sylv. (beech-tree) l.

April

April 11. May 9. Shell snails come out in troops

11. Middle yellow wren ap.

13. May 7. Swift ap.

14. May 17. *Conops calcitrans* (stinging fly) ap.

14. *Draba verna* (whitlow grass) fl.

14. Larch l.

14. May 14. White throat ap.

14. Red ant ap.

14. May 27. *Gryllus Gryllotalpa* (Mole cricket) *churs.*

14—19—23. Second willow or laughing wren ap.

15—19. *Pedicularis fylv.* (red rattle) fl.

15. *Musca carnaria* (common flesh fly) ap.

April

22 NATURALIST'S CALENDAR.

- April 16. *Coccinella bipunctata*
(lady cow) ap.
- 16—30. *Alauda Locustæ vocæ*
(grasshopper lark) ap.
17. May 7. Large shivering willow
wren ap.
- 17—27. Middle willow wren (re-
gulus non cristatus me-
dius) ap.
18. May 12. *Prunus Cerasus* (wild
cherry) fl.
18. May 11. Garden cherry fl.
18. May 5. *Prunus domest.* (plum) fl.
- 19—25. *Hyacinthus non scriptus*
(harebell) fl.
- 20—17. Turtle cooes
20. June 11. *Cratægus oxyacanthus*
(hawthorn or May) fl.
21. *Orchis mascula* fl.

April

April 21. May 23. *Musca vomitoria* (Blue
flesh-fly) ap.

22. Black snails abound.

22. May 25. Apple-trees fl.

22. June 11. Large bat ap.

23—29. *Fragaria vesca* (Straw-
berry) fl.

23. *Erysimum Alliaria* (Sauce
alone) fl.

24. *Prunus avium* (bird
cherry) fl.

24. *Apis hypnorum* ap.

24. May 28. *Musca meridiana* ap.

25. *Ailus* (Wolf fly) ap.

28. May 20. *Papilio Brafficae* (great
white cabbage butter-
fly) ap.

30. May 21. *Libellulae* (Dragon flies)
ap.

30. June 6. *Acer majus* (sycamore) fl.

May

24 NATURALIST'S CALENDAR.

- May 1. Bombylius minor ap.
 1. June 11. Glow-worm shines
 1—26. Caprimulgus (fern owl or
 goat fucker) returns
 1. Ajuga reptans (bugle) fl.
 2—24. Gryllus campestr. (field
 crickets) *crink*
 2—26. Scarabæus Melolontha
 (May chaffer) ap.
 3—30. Lonicera periclymen.
 (honeyfuckle) fl.
 4—12. Lathræa squammaria
 (toothwort) fl.
 4. June 17. Shell snails copulate
 4. Small reed sparrow sings
 5—17. Viburnum Lantana
 (mealy tree) fl.
 10—30. Stoparola (fly catcher) ap.
 10. June 9. Apis longicornis ap.

May

- May 11—13. Passer Arund. minor
(fedge bird) ap.
- 13—15. Oak in male bloom
13. Papilio Atalanta (admiral butterfly) ap.
14. Papilio cardamines
(orange tip butterfly)
ap.
- 15—26. Fagus sylvat. (beech) fl.
16. Acer campeft. (Maple) fl.
- 17—26. Berberis vulg. (Barberry)
fl.
17. Papilio Ægeria (wood
Argus butterfly) ap.
18. June 11. Orange lily fl.
18. June 13. Sphynx Filipendulæ
(burnet moth) ap.
18. Juglans regia (walnut) l.
18. June 5. Cytifus laburnum fl.

D

May

- May 18. June 9. *Hippobosca equina*
(forest fly) ap.
19. June 8. *Hedysarum Onobrychis*
(saintfoin) fl.
20. June 15. *Pæonia offic.* (piony) fl.
21. June 9. *Æsculus Hippocastanum*
(horse chestnut) fl.
21. Lilac fl.
- 21—27. *Aquilegia vulg.* (colum-
bine) fl.
21. June 20. *Mespilus German.* (med-
lar) fl.
21. *Tormentilla reptans* fl.
22. *Convallaria min.* (lily
of the valley) fl.
22. July 22. Bees swarm
- 22—25. *Asperula odorat.* (wood-
roose) fl.
23. Wasps (female) ap.

May

- May 23. June 8. *Sorbus aucuparia* (mountain ash) fl.
24. June 11. *Ophrys nidus avis* (birds nest orchis) fl.
24. June 4. *Crataegus Aria* (white beam tree) fl.
24. June 7. *Polygala vulg.* (milk-wort) fl.
25. *Cistus Helianthemum* (rock-rose) fl.
26. *Viburnum Opulus* (Gelder rose) fl.
26. June 25. *Sambucus niger* (elder) fl.
26. *Cantharis noctiluca* ap.
27. June 9. *Apis longicornis* bores holes in walks:
27. June 13. *Morus nigra* (mulberry) l.
27. *Crataegus torminalis* (wild service tree) fl.

28 NATURALIST'S CALENDAR.

- May 27. June 13. *Sanicula europæa* fl.
 28. *Geum urbanum* (avens)
 fl.
 28. *Orchis morio* fl.
 29. June 1. *Lychnis flos cuculi*
 (cuckow-flower) fl.
 29. *Poterium Sanguisorba*
 (burnet) fl.
 30. June 22. *Digitalis purpur.* (fox-
 glove) fl.
 30. June 20. Corn flag fl.
 30. June 13. *Serapias longifol.* fl.
 30. June 21. *Rubus Idæus* (raspberry)
 fl.
 30. *Geranium robertianum*
 (herb robert) fl.
 31. *Scrophularia nodosa*
 (figwort) fl.
 31. *Lithospermum officin.*
 (gromwell) fl.

June

- June 1. Euphorbia Amygdaloid.
(wood spurge) fl.
1. Allium urfinum (ram-
fons) fl.
1. Myosotis scorpioides
(mouse-ear scorpion-
grafs) fl.
- 1—14. Grasshopper ap.
- 1—21. Rose fl.
1. July 16. Hieracium minor fl.
1. Menyanthes trifol. (buck-
bean) fl.
- 2—8. Scarabæus aurat. (brafs
or green beetle) ap.
- 2—23. Sheep shorn
2. Iris Pseudacorus (water
flag) fl.
2. Secale Cereale (Rye) fl.
2. Cynoglossum offic.
(hounds-tongue) fl.

June

- June 2. Aug. 6. *Serapias latifol.* fl.
 2. *Musca Cæsar* (green-gold fly) ap.
 2. *Papilio Moera* (Argus butterfly) ap.
 3. *Ranunculus flammula* fl.
 3. *Lotus cornicul.* (birds foot trefoil) fl.
 3—11. *Fraxinella* fl.
 3. *Phryganea nigra* ap.
 3—14. *Ephemera vulg.* (angler's May fly) ap.
 4. *Anthyllis vulner.* (ladies fingers) fl.
 4. July 4. *Ophrys apifera* (bee orchis) fl.
 5—19. Pinks fl.
 5. *Philadelphus coronar.* fl.
 5—20. *Libellula Virgo* ap.
 7. July 30. *Vitis vinifera* (vine) fl.

June

- June 8. July 1. Portugal laurel fl.
 8—25. Purple Martagon fl.
 8. Aug. 1. Geranium pratense (meadow cranesbill) fl.
 8. Tamus communis (lady seal) fl.
 9. Field pea fl.
 9. Cucubalus behen.
 (bladder campion) fl.
 9. Bryonia alba (bryony) fl.
 10. Stachys sylvat. fl.
 11. Solanum Dulcamara
 (bitter-sweet) fl.
 12. Juglans reg. (walnut) fl.
 12. July 23. Phallus impudicus ap.
 12. Epilobium angustifol.
 (narrow-leaved willow-herb) fl.
 13. July 22. Triticum hybern.
 (wheat) fl.

June

- June 13. *Symphytum offic.* (com-frey) fl.
- 13—30. *Lyfimachia nemorum* fl.
15. Aug. 24. *Tremella nostoc* ap.
16. *Rhamnus cathart.* (buck-thorn) fl.
16. *Cicada spumaria* (cuckow-spit insect or frog-hopper) ap.
- 17—18. *Rosa canina* (dog-rose) fl.
17. Sept. 3. *Lycoperdon bovista*
 (large puff-ball) ap.
18. *Verbascum Thapsus*
 (Mullein) fl.
19. *Echium vulg.* (Viper's bugloss) fl.
19. July 20. Meadow hay cut
19. *Scarabæus cervus* ap.
20. *Borago officin.* fl.

June

- June 20. *Euonymus europæus*
(Spindle tree) fl.
20. July 4. *Carduus nutans* (musk
thistle) fl.
21. *Cornus sanguin.* (dog-
wood) fl.
21. *Scabiosa arv.* (field scabi-
ous) fl.
- 21—27. *Carduus palustris* (marsh
thistle) fl.
22. July 9. *Spiræa Filipendula* (drop-
wort) fl.
22. July 7. *Valeriana officin.* fl.
22. July 4. Quails call
22. *Epilobium montan.*
(mountain willow-
herb) fl.
- 23—29. *Carduus crispus* (thistle
upon thistle) fl.

E June

34 NATURALIST'S CALENDAR.

- June 23. *Heracleum Sphondylium*
(cow parsnep) fl.
23. *Bunium Bulbocast.* (earth
nut) fl.
23. Aug. 2. Young frogs migrate
24. *Oestrus curvicauda* ap.
24. *Verbena officin.* (Ver-
vain) fl.
24. *Papaver Rhoeas* (corn
poppy) fl.
24. *Prunella vulg.* (self-heal)
fl.
- 24—29. *Agrimonia Eupator.*
(Agrimony) fl.
24. Aug. 2. *Tabanus Bovinus* (great
horse-fly) ap.
25. *Centaurea Scabiosa* (great
knapweed) fl.
26. Aug. 30. *Agaricus campest.* (mush-
room) ap.

June

- June 26. Malva fylv. (common
mallow) fl.
26. ——— rotundifol. fl.
26. Hypericum perforat. (St.
John's wort) fl.
27. July 4. Orobanche major (broom
rape) fl.
27. Hyoscyamus niger (hen-
bane) fl.
27. Tragopogon pratens.
(goat's beard) fl.
27. Atropa Belladonna
(deadly nightshade) fl.
28. July 29. Truffles begin to be found.
28. July 31. Young partridges fly
28. July 31. Tilia europ. (lime tree)
fl.
28. July 12. Carduus lanceolat. (spear
thistle) fl.

- June 28. Spiræa Ulmaria (meadow-sweet) fl.
28. Genista tinctoria (Dyers broom) fl.
28. Thymus serpyllum (wild thyme) fl.
29. July 20. Stachys germanic. fl.
29. July 4. Hemerocallis (day lily) fl.
29. July 30. Jasmine fl.
29. Aug. 4. Hollyhock fl.
29. July 23. Monotropa Hypopithys fl.
29. Galium verum (ladies bedstraw) fl.
29. ——— palustre fl.
29. Lapsana com. (nipplewort) fl.
29. Carduus acanthoides (welled thistle) fl.

June

- June 30. Achillea Ptarmica
(sneezewort) fl.
30. Malva moschat. (musk
mallow) fl.
30. Anagallis arv. (pimper-
nel) fl.
30. July 17. Scarabæus foliit. (hoary
beetle) ap.
- July 1. Serratula arv. (common
thistle) fl.
1. Adonis ann. (pheasant's
eye) fl.
2. Euphrasia Odontit. (red
eyebright) fl.
2. Bupleurum rotundifol.
(thorough-wax) fl.
2. Agrostemma Githago
(cockle) fl.
2. Prenanthes muralis (ivy-
leaf) fl.

July

- July 2. *Matricaria Parthenium*
 (feverfew) fl.
3. *Sedum acre* (stone crop)
 fl.
3. *Ligustrum vulg.* (Privet)
 fl.
3. *Antirrhinum Linaria*
 (toad flax) fl.
4. *Linum perenne* (fiberian
 flax) fl.
- 4—24. *Vaccinium ulig.* (whortle-
 berries) ripe
5. *Refeda lutea* fl.
5. *Centaurea Cyanus* (blue
 bottle) fl.
- 5—12. *Carduus acaulis* (dwarf
 carline thistle) fl.
6. *Typha latifol.* (bulrush) fl.
6. *Lythrum Salicaria* (spiked
 willow-herb) fl.

July

- July 6. *Verbascum nigr.* (black
 mullein) fl.
6. *Chrysanthemum* fl.
- 6—9. *Marigolds* fl.
7. *Sherardia arv.* (little field
 madder) fl.
7. *Melissa Nepeta* (field ca-
 lamint) fl.
7. *Balotta nigr.* (henbit) fl.
- 8—19. *Betonica officin.* (betony)
 fl.
8. *Campanula rotundifol.* fl.
8. *Chenopodium Bonus*
 Henricus (English
 mercury) fl.
8. *Daucus carota* (wild
 carrot) fl.
- 8—20. *Tropeolum maj.* (Indian
 cress) fl.

July

July 9.	<i>Nepeta cataria</i> (cat mint) fl.
9.	<i>Melampyrum sylvat.</i> (cow wheat) fl.
9.	<i>Valantia cruciata</i> (cross- wort) fl.
9—27.	Cranberries ripe
10.	<i>Vicia Cracca</i> (tufted vetch) fl.
10.	— <i>Sylvat.</i> (wood vetch) fl.
11.	<i>Campanula glomerata</i> (little throatwort) fl.
11.	<i>Jasione montan.</i> (hairy sheep's scabious) fl.
12.	<i>Pastinaca sylv.</i> fl.
12.	<i>Lilium alb.</i> (white lily) fl.
13.	<i>Conium maculat.</i> (hem- lock) fl.

July

- July 13. Caucalis Anthriscus fl.
13. Aug. 11. Flying ants ap.
13. Lyfimachia Nummularia
 (moneywort) fl.
14. Aug. 4. Scarlet martagon fl.
14. Stellaria graminea fl.
14. Æthusa Cynapium (fool's
 parsley) fl.
- 14—29. Sambucus Ebulus (dwarf
 elder) fl.
14. Aug. 29. Young martins and
 swallows begin to
 congregate.
14. Potatoes fl.
15. Angelica sylv. fl.
- 15—25. Digitalis ferrugin. fl.
15. Senecio Jacobæa (rag-
 wort) fl.
15. Solidago Virg-aurea
 (golden-rod) fl.

F

July

42 NATURALIST'S CALENDAR.

- July 16. Centaurea Calcitrapa
(star thistle) fl.
16. Oenothera biennis fl.
17. Aug. 14. Pease cut
17. Galega officin. fl.
17. Aug. 21. Apricots ripe
17. Stachys palustr. fl.
17. Epilobium ramos.
(branching willow-
herb) fl.
17. Aug. 7. Rye harvest begins
18. Aug. 15. Chlora perfol. (yellow
centaury) fl.
18. Lathyrus Aphaca (yellow
vetchling) fl.
18. Circaea lutetiana (en-
chanter's nightshade) fl.
18. Eupatorium cannabin.
(water-hemp agri-
mony) fl.

July

- July 19. *Campanula latifol.* (giant throat-wort) fl.
19. *Euphrasia officin.* (eye-bright) fl.
19. Aug. 10. *Humulus Lupulus* (hop) fl.
19. Poultry moult
20. *Cuscuta europ.* (Dodder) fl.
20. *Gentianum centaureum* (lesser centaury) fl.
20. *Sium nodiflorum* fl.
21. *Spergula arv.* (spurrey) fl.
21. *Trifolium arv.* fl.
21. *Polygonum Fagopyr.* (buck wheat) fl.
21. Aug. 23. Wheat harvest begins
22. *Sparganium erect.* (great bur-reed) fl.

- July 22—31. *Hypericum elodes* (marsh
 St. John's wort) fl.
22. *Drosera rotundifol.* (sun
 dew) fl.
22. *Comarum palustr.* (pur-
 ple marsh cinquefoil) fl.
22. Wild cherries ripe
22. *Anthericum Officinarum*
 (Lancashire asphodel) fl.
23. *Scutellaria galericulat.*
 (hooded willow-herb) fl.
23. *Oenanthe fistulos.* (water
 dropwort) fl.
23. *Marrubium vulg.* (hore-
 hound) fl.
24. *Seseli caruifol.* fl.
24. *Alisma Plantago* (water
 plantain) fl.
25. *Alopecurus myosuroides*
 fl.

July

- July 25. Aug. 9. Clematis Vitalba (virgin's bower) fl.
25. Bees kill the drones
26. Dipfucus fylv. (teasel) fl.
26. Origanum vulg. (wild marjoram) fl.
- 27—29. Swifts begin to depart
- 28—29. Dipfucus pilofus (small wild teasel) fl.
28. Teucrium Scorodonia (wood sage) fl.
28. Lathyrus latifol. (everlasting pea) fl.
29. Hypericum humifusum (trailing St. John's wort) fl.
30. Veratrum album. (white hellebore) fl.
30. Anthemis nobil. (camomile) fl.

July

- July 30. Scabiosa columbaria fl.
31. Aug. 6. Helianthus multiflor.
(fun flower) fl.
31. Lyfimachia vulg. (yellow
loofe-strife) fl.
31. Aug. 27. Swifts last seen
Aug. 1—16. Oats cut
1—26. Barley cut
1. Scutellaria minor fl.
2. Inula dysenterica (marsh
flea-bane) fl.
2. Apis manicata ap.
2. Papilio machaon (swallow
tailed butterfly) ap.
3—19. Oeftrus Bovis (whame or
burrel fly) lays eggs
on horses.
3. Sonchus arvens. (low-
thistle) fl.

Aug.

- Aug. 3. *Papilio Cinxia* (plantain
fritillary) ap.
4. *Picris Hieracioides* (yel-
low succory) fl.
4. *Musca mystacea* ap.
5. *Campanula trachelium*
(Canterbury bells) fl.
5. *Mentha longifol.* fl.
7. *Carlina vulg.* (carline
thistle) fl.
7. *Rhus Cotinus* fl.
7. *Ptinus pectinicornis* ap.
8. *Arctium lappa* (burdock)
fl.
8. Sept. 3. *Gentiana Amarella* (fell-
wort) fl.
8. *Artemisia Absinthium*
(wormwood) fl.
8. ——— vulg. (mug-
wort) fl.

Aug.

- Aug. 10. Centaurea solstit. (St.
Barnaby's thistle) fl.
10. Sept. 13. Colchicum autumn.
(meadow saffron) fl.
12. Sept. 27. After (Michaelmas daisy)
fl.
14. Thalictrum flavum (mea-
dow rue) fl.
14. Eryngium marit. (sea
holly) fl.
14. Sept. 28. China-afters fl.
14. Boletus albus ap.
15. Campanula hybrida (lès
Venuslooking-glafs) fl.
15. Carthamus tinctor. fl.
15. Young broods of gold-
finches ap.
15. Sept. 12. Lapwings congregate.
15. Papilio semele (black-
eyed marble butterfly)
ap.

Aug.

- Aug. 16. Birds reassume their
spring notes
17. Scabiosa succisa (devils-
bit) fl.
17. Sept. 10. Thistle down floats
18. Conyza squarrosa (plow-
man's spikenard) fl.
18. Leontodon autumn. (au-
tumnal dandelion) fl.
18. Flies abound in windows
18. Nov. 1. Linnets congregate
20. Bulls make their shrill au-
tumnal noise
22. After amellus fl.
23. Impatiens balsamina
(balsam) fl.
24. Carduus marianus (milk
thistle) fl.
24. Sept. 17. Hop picking begins
- G Aug.

- Aug. 24. Sept. 22. Beeches begin to be
tinged with yellow
25. Saponaria officin. (soap-
wort) fl.
27. Sept. 12. Ophrys spiralis (ladies
traces) fl.
29. Papilio Phlæas (small
golden black-spotted
butterfly) ap.
29. Swallows sing
30. Sept. 2. Hybiscus Syriacus fl.
30. Papilio Paphia (great
fritillary) ap.
31. Phalæna pacta (willow
red under-wing moth)
ap.
- Sept. 1. Nov. 7. Stone curlews clamour
1. Phalæna ruffula ap.
4. Oct. 24. Grapes ripen

Sept.

- Sept. 4. Nov. 9. Wood owls hoot
 4. Papilio Hyale (saffron butterfly) ap.
 4—30. Ring Ouzle ap. on its autumnal visit
 6—29. Stoparola (flycatcher) withdraws.
 11. Bean harvest begins
 12. Oct. 2. Hedera Helix (ivy) fl.
 12. Nov. 1. Stares congregate
 25. Wild honeyfuckles fl. a second time
 28. Oct. 24. Wood lark sings.
 29. Nov. 11. Woodcocks come
 Oct. 1. Arbutus Unedo fl.
 3. Nov. 9. Wheat sown.
 4. Nov. 5. Swallows last seen.
 (N. B. The house-martin, the latest)
 10. Nov. 10. Redwings come

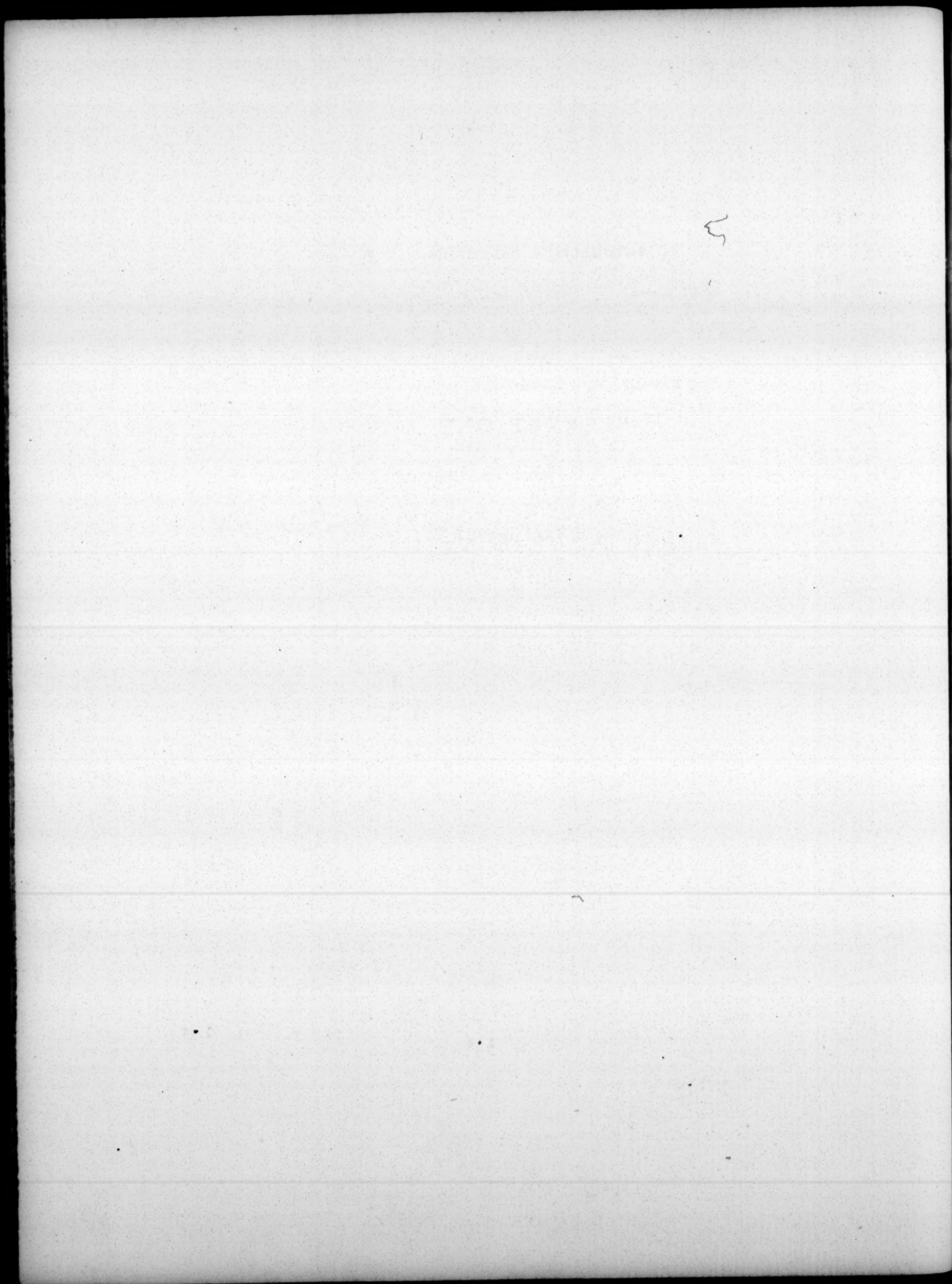
- Oct. 12. Nov. 23. Fieldfares come
15—27. Gossamer fills the air
19. China Hollyhock fl.
20. Dec. 31. Hen chaffinches congregate
23. Dec. 27. Wood pigeons come
23. Nov. 29. Grey crows come
25. Nov. 20. Snipes come up into the meadows
27. Nov. 26. Tortoise begins to bury himself
31. Dec. 25. Rooks visit their nest trees
- Nov. 1. Bucks grunt
10. Primrose fl.
13—14. Green whistling plover ap.
16. Helvella mitra ap.
27. Greenfinches flock
30. Dec. 29. Hepatica fl.

Dec.

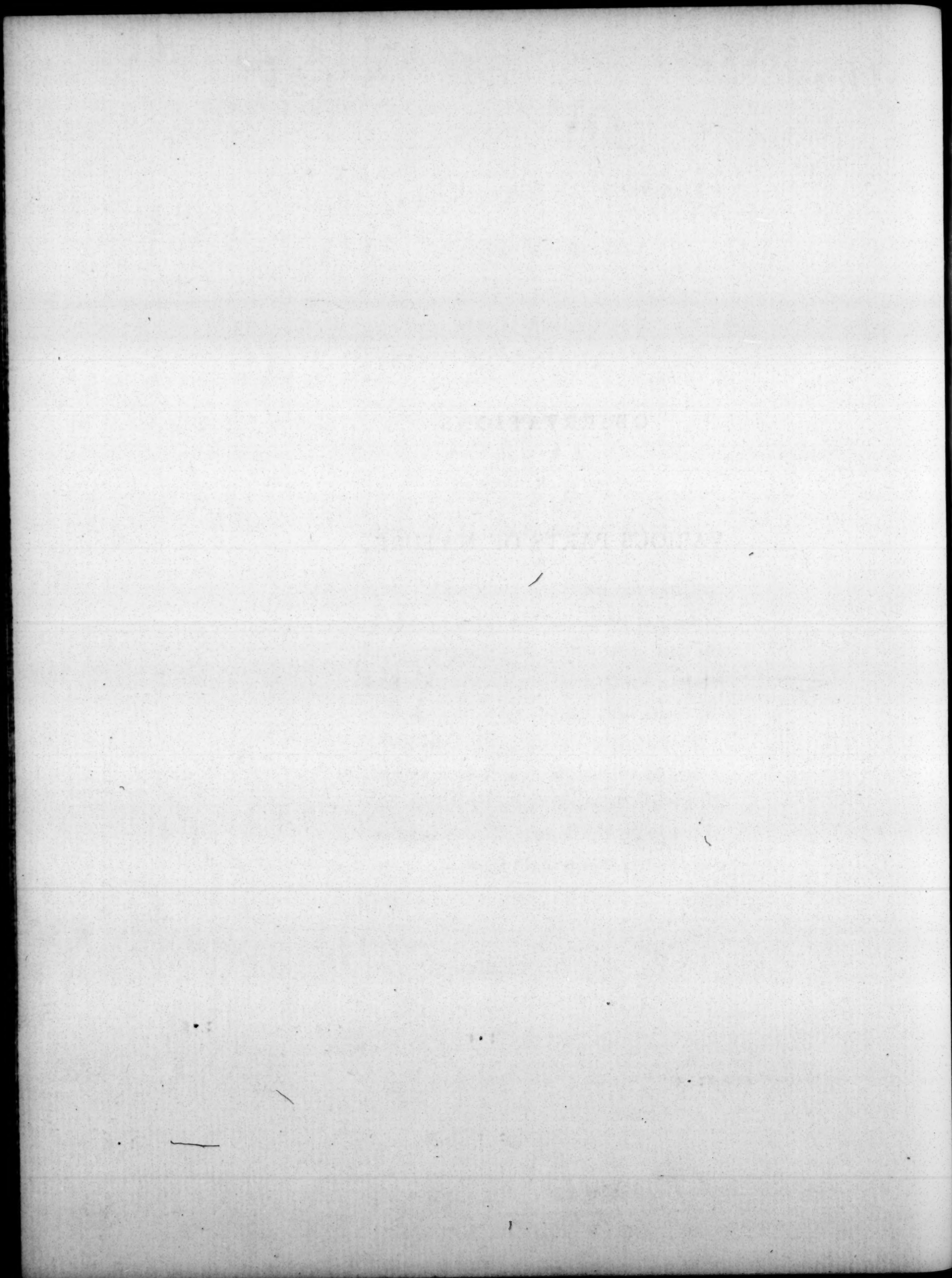
Dec. 4—21.	Ulex europ. (gorse or furze) fl.
7—16.	Polyanthus fl.
11—27.	Lambs fall
12—23.	Moles work in throwing up hillocks
14—30.	Helleborus foetid. fl.
15.	Daisy fl.
15.	Wall flower fl.
15.	Mezereon fl.
29.	Snowdrop fl.

“ IN SESE VERTITUR ANNUS.”

OBSER-



OBSERVATIONS
ON
VARIOUS PARTS OF NATURE.



OBSERVATIONS ON BIRDS.

BIRDS IN GENERAL.

IN severe weather, fieldfares, red wings, sky larks, and tit larks resort to watered meadows for food; the latter wades up to its belly in pursuit of the pupæ of insects, and runs along upon the floating grafs and weeds. Many gnats are on the snow near the water, these support the birds in part.

Birds are much influenced in their choice of food by colour, for though white currants are a much sweeter fruit than red, yet they seldom touch the former till they have devoured every bunch of the latter.

H

Red-

Red-starts, Fly-catchers and Black-caps arrive early in April. If these little delicate beings are birds of passage, (as we have reason to suppose they are, because they are never seen in winter) how could they, feeble as they seem, bear up against such storms of snow and rain, and make their way through such meteorous turbulencies, as one should suppose would embarrass and retard the most hardy and resolute of the winged nation? Yet they keep their appointed times and seasons; and in spite of frosts and winds return to their stations periodically as if they had met with nothing to obstruct them. The withdrawing and appearance of the *short winged* summer birds is a very puzzling circumstance in natural history!

When the boys bring me wasps nests, my bantam fowls fare deliciously, and when the combs

combs are pulled to pieces, devour the young wasps in their maggot state with the highest glee and delight. Any insect-eating bird would do the same; and therefore I have often wondered that the accurate Mr. Ray should call one species of buzzard *buteo apivorus* five *vespivorus*, or the *honey buzzard*, because some combs of wasps happened to be found in one of their nests. The combs were conveyed thither doubtless for the sake of the maggots or nymphs, and not for their honey: since none is to be found in the combs of wasps. Birds of prey occasionally feed on insects: thus have I seen a tame kite picking up the female ants full of eggs, with much satisfaction.

ROOKS.

Rooks are continually fighting and pulling each others nests to pieces: these proceed-

H 2

ings

ings are inconsistent with living in such close community. And yet if a pair offers to build on a single tree, the nest is plundered and demolished at once. Some rooks roost on their nest trees. The twigs which the rooks drop in building supply the poor with brush-wood to light their fires. Some unhappy pairs are not permitted to finish any nest till the rest have completed their building. As soon as they get a few sticks together, a party comes and demolishes the whole. As soon as rooks have finished their nests, and before they lay, the cocks begin to feed the hens, who receive their bounty with a fondling, tremulous voice, and fluttering wings, and all the little blandishments that are expressed by the young while in a helpless state. This gallant deportment of the males is continued through the whole season of incubation. These birds
do

do not copulate on trees, nor in their nests, but on the ground in open fields.

THRUSHES.

THRUSHES during long droughts are of great service in hunting out shell snails, which they pull in pieces for their young, and are thereby very serviceable in gardens.

Miffel thrushes do not destroy the fruit in gardens like the other species of turdi, but feed on the berries of misseltoe, and in the spring on ivy berries which then begin to ripen. In the summer, when their young become fledge, they leave neighbourhoods, and retire to sheep walks and wild commons.

The magpies, when they have young, destroy the broods of missel thrushes, though the dams are fierce birds, and fight boldly in defence of their nests. It is probably to avoid

avoid such insults, that this species of thrush, though wild at other times, delights to build near houses, and in frequented walks, and gardens.

POULTRY.

MANY creatures are endowed with a ready discernment to see what will turn to their own advantage and emolument; and often discover more sagacity than could be expected. Thus my neighbour's poultry watch for waggons loaded with wheat, and running after them, pick up a number of grains which are shaken from the sheaves by the agitation of the carriages. Thus, when my brother used to take down his gun to shoot sparrows, his cats would run out before him, to be ready to catch up the birds as they fell.

The earnest and early propensity of the
gallinæ

gallinæ to roost on high is very observable; and discovers a strong dread impressed on their spirits respecting vermin that may annoy them on the ground during the hours of darkness. Hence, poultry, if left to themselves and not housed, will perch the winter through on yew-trees and fir-trees; and turkies, and guinea fowls, heavy as they are, get up into apple-trees: pheasants also in woods sleep on trees to avoid foxes; while pea fowls climb to the tops of the highest trees round their owner's house for security, let the weather be ever so cold or blowing. Partridges, it is true, roost on the ground, not having the faculty of perching; but then the same fear prevails in their minds; for through apprehensions from pole-cats and stoats, they never trust themselves to coverts; but nestle together in the midst of large fields, far removed from hedges and coppices,

64 OBSERVATIONS ON BIRDS.

coppices, which they love to haunt in the day, and where at that season they can sculk more secure from the ravages of rapacious birds.

As to ducks and geese, their awkward, splay, web feet forbid them to fettle on trees; they therefore, in the hours of darkness and danger, betake themselves to their own element, the water, where, amidst large lakes and pools, like ships riding at anchor, they float the whole night long in peace and security.

HEN PARTRIDGE.

A HEN Partridge came out of a ditch, and ran along shivering with her wings, and crying out, as if wounded and unable to get from us. While the dam acted this distress, the boy who attended me saw her brood, that was small and unable to fly, run
for

for shelter into an old fox-earth under the bank. So wonderful a power is instinct!

A HYBRID PHEASANT.

LORD Stawell sent me from the great lodge in the holt a curious bird for my inspection. It was found by the spaniels of one of his keepers in a coppice, and shot on the wing. The shape, and air, and habit of the bird, and the scarlet ring round the eyes, agreed well with the appearance of a cock pheasant; but then the head and neck and breast and belly were of a glossy black: and though it weighed 3lb. $3\frac{1}{2}$ oz. * the weight of a large full grown cock pheasant, yet there were no signs of any spurs on the legs, as is usual with all grown cock pheasants, who have long ones. The legs and feet were naked of feathers; and therefore it could be nothing of the grous kind. In

* Hen pheasants usually weigh only 2lb. 10z.

I

the

the tail were no long bending feathers, such as cock pheasants usually have; and are characteristic of the sex. The tail was much shorter than the tail of a hen pheasant, and blunt and square at the end. The back, wing feathers, and tail, were all of a pale ruflet curiously streaked, somewhat like the upper parts of a hen partridge. I returned it, with my verdict, that it was probably a spurious or hybrid hen bird, bred between a cock pheasant and some domestic fowl. When I came to talk with the keeper who brought it, he told me that some peahens had been known last summer to haunt the coppices and coverts where this mule was found.

Mr. Elmer, of Farnham, the famous game painter, was employed to take an exact copy of this curious bird.

N. B. It ought to be mentioned, that some good judges have imagined this bird to have been a stray grouse or black-cock; it is however

however to be observed, that Mr. W. remarks that its legs and feet were naked, whereas those of the grouse are feathered to the toes.

LAND RAIL.

A MAN brought me a *land-rail* or *daker-ben*, a bird so rare in this district, that we seldom see more than one or two in a season, and those only in autumn. This is deemed a bird of passage by all the writers: yet from its formation seems to be poorly qualified for migration; for its wings are short, and placed so forward, and out of the centre of gravity, that it flies in a very heavy and embarrassed manner, with its legs hanging down; and can hardly be sprung a second time, as it runs very fast, and seems to depend more on the swiftness of its feet than on its flying.

When we came to draw it, we found the

I 2 entrails

entrails so soft and tender that in appearance they might have been dressed like the ropes of a woodcock. The craw or crop was small and lank, containing a mucus; the gizzard thick and strong, and filled with small shell snails, some whole, and many ground to pieces through the attrition which is occasioned by the muscular force and motion of that intestine. We saw no gravels among the food: perhaps the shell snails might perform the functions of gravels or pebbles, and might grind one another. *Land-rails* used to abound formerly, I remember, in the low wet bean fields of Christian-Malford in North Wilts, and in the meadows near Paradise gardens at Oxford, where I have often heard them cry crex, crex. The bird mentioned above weighed $7\frac{1}{2}$ oz. was fat and tender, and in flavour like the flesh of a woodcock. The liver was very large and delicate.

FOOD

FOOD OF THE RING DOVE.

ONE of my neighbours shot a ring-dove on an evening as it was returning from feed and going to roost. When his wife had picked and drawn it, she found its craw stuffed with the most nice and tender tops of turnips. These she washed and boiled, and so fate down to a choice and delicate plate of greens, culled and provided in this extraordinary manner.

Hence we may see that graminivorous birds, when grain fails, can subsist on the leaves of vegetables. There is reason to suppose that they would not long be healthy without, for turkies, though corn fed, delight in a variety of plants, such as cabbage, lettuce, endive, &c. And poultry pick much grass; while geese live for months together on commons by grazing alone.

“ Nought

" Nought is uselefs made ;

" On the barren heath

" The shepherd tends his flock that daily crop

" Their verdant dinner from the mossy turf

" Sufficient : after them the cackling *goose*,

" Close-grazer, finds wherewith to ease her want."

PHILIPS'S CYDER.

HEN HARRIER.

MR. WHITE of Newton sprung a pheasant in a wheat stubble, and shot at it; when, notwithstanding the report of the gun, it was immediately pursued by the blue hawk, known by the name of the *hen-harrier*, but escaped into some covert. He then sprung a second, and a third, in the same field, that got away in the same manner; the hawk hovering round him all the while that he was beating the field, conscious no doubt of the game that lurked in the stubble. Hence we may conclude that this bird of prey was rendered very daring and bold

bold by hunger, and that hawks cannot always seize their game when they please. We may farther observe, that they cannot pounce their quarry on the ground where it might be able to make a stout resistance, since so large a fowl as a pheasant could not but be visible to the piercing eye of a hawk when hovering over a field. Hence that propensity of cowering and squatting till they are almost trod on, which no doubt was intended as a mode of security: though long rendered destructive to the whole race of gallinæ by the invention of nets and guns.

GREAT SPECKLED DIVER, or LOON.

As one of my neighbours was traversing Wolmer forest from Bramshot across the moors, he found a large uncommon bird fluttering in the heath, but not wounded,

which he brought home alive. On examination it proved to be *Colymbus glacialis* Linn. the great speckled diver or loon, which is most excellently described in Willughby's ornithology.

Every part and proportion of this bird is so incomparably adapted to its mode of life, that in no instance do we see the wisdom of God in the creation to more advantage. The head is sharp, and smaller than the part of the neck adjoining, in order that it may pierce the water; the wings are placed forward and out of the center of gravity, for a purpose which shall be noticed hereafter; the thighs quite at the podex, in order to facilitate diving; and the legs are flat, and as sharp backwards almost as the edge of a knife, that in striking they may easily cut the water; while the feet are palmated, and broad for swimming, yet so folded

folded up when advanced forward to take a fresh stroke, as to be full as narrow as the shank. The two exterior toes of the feet are longest; the nails flat and broad resembling the human, which give strength and increase the power of swimming. The foot, when expanded, is not at right angles to the leg or body of the bird: but the exterior part inclining towards the head forms an acute angle with the body; the intention being not to give motion in the line of the legs themselves, but by the combined impulse of both in an intermediate line, the line of the body.

Most people know, that have observed at all, that the swimming of birds is nothing more than a walking in the water, where one foot succeeds the other as on the land; yet no one, as far as I am aware, has re-

K

marked

marked that diving fowls, while under water, impel and row themselves forward by a motion of their wings, as well as by the impulse of their feet: but such is really the case, as any person may easily be convinced who will observe ducks when hunted by dogs in a clear pond. Nor do I know that any one has given a reason why the wings of diving fowls are placed so forward: doubtless, not for the purpose of promoting their speed in flying, since that position certainly impedes it; but probably for the increase of their motion under water, by the use of four oars instead of two; yet were the wings and feet nearer together, as in land birds, they would, when in action, rather hinder than assist one another.

This *Colymbus* was of considerable bulk, weighing only three drachms short of three pounds

pounds avoirdupois. It measured in length from the bill to the tail (which was very short) two feet; and to the extremities of the toes four inches more; and the breadth of the wings expanded was 42 inches. A person attempted to eat the body, but found it very strong and rancid, as is the flesh of all birds living on fish. *Divers* or *Loons*, though bred in the most northerly parts of Europe, yet are seen with us in very severe winters; and on the Thames are called *sprat loons*, because they prey much on that sort of fish.

The legs of the *Colymbi* and *Mergi* are placed so very backward, and so out of all center of gravity, that these birds cannot walk at all. They are called by Linnæus *compedes*, because they move on the ground as if shackled, or fettered.

STONE CURLEW.

ON the 27th of February 1788, *Stone Curlews* were heard to pipe; and on March 1st, after it was dark, some were passing over the village, as might be perceived by their quick short note, which they use in their nocturnal excursions by way of watch-word, that they may not stray and lose their companions.

Thus, we see, that retire whithersoever they may in the winter, they return again early in the spring, and are, as it now appears, the first summer birds that come back. Perhaps the mildness of the season may have quickened the emigration of the curlews this year.

They spend the day in high elevated fields and sheep-walks; but seem to descend in the night to streams and meadows, perhaps for water,

water, which their upland haunts do not afford them.

THE SMALLEST WILLOW WREN.

THE smallest uncrested or willow wren, or chiff chaf, is the next early summer bird which we have remarked; it utters two sharp piercing notes, so loud in hollow woods as to occasion an echo, and is usually first heard about the 20th of March.

FERN OWL, OR GOAT SUCKER.

THE country people have a notion that the *fern owl*, or *churn owl*, or *eve-jarr*, which they also call a *puckeridge*, is very injurious to weanling calves, by inflicting, as it strikes at them, the fatal distemper known to cow-leeches by the name of *puckeridge*. Thus does this harmless, ill-fated bird fall under a double imputation which it by no means deserves;

deserves; in Italy, of sucking the teats of goats, whence it is called *caprimulgus*; and with us, of communicating a deadly disorder to cattle. But the truth of the matter is, the malady above mentioned is occasioned by the *Æstrus bovis*, a dipterous insect which lays its eggs along the chines of kine, where the maggots, when hatched, eat their way through the hide of the beast into the flesh, and grow to a very large size. I have just talked with a man, who says, he has more than once stripped calves who have died of the *puckeridge*; that the ail or complaint lay along the chine, where the flesh was much swelled, and filled with purulent matter. Once I myself saw a large rough maggot of this sort squeezed out of the back of a cow.

These maggots in Essex are called wornils.

The least observation and attention would convince men, that these birds neither injure

the goatherd nor the grazier, but are perfectly harmless, and subsist alone, being night birds, on night insects, such as *scarabæi* and *phalænæ*; and through the month of July mostly on the *scarabæus solstitialis*, which in many districts abounds at that season. Those that we have opened, have always had their craws stuffed with large night-moths and their eggs, and pieces of chaffers: nor does it anywise appear how they can, weak and unarmed as they seem, inflict any harm upon kine, unless they possess the powers of animal magnetism, and can affect them by fluttering over them.

A *fern owl*, this evening (August 27), showed off in a very unusual and entertaining manner, by hawking round and round the circumference of my great spreading oak, for twenty times following, keeping mostly close to the grass, but occasionally glancing

ing up amidst the boughs of the tree. This amusing bird was then in pursuit of a brood of some particular phalæna belonging to the oak, of which there are several sorts; and exhibited on the occasion a command of wing superior, I think, to that of the swallow itself.

When a person approaches the haunt of fern-owls in an evening, they continue flying round the head of the obtruder, and by striking their wings together above their backs, in the manner that the pigeons called smiters are known to do, make a smart snap: perhaps at that time they are jealous for their young; and this noise and gesture are intended by way of menace.

Fern-owls have attachment to oaks, no doubt on account of food; for the next evening we saw one again several times among the boughs of the same tree; but it did

did not skim round its stem over the grass, as on the evening before. In May these birds find the *Scarabæus melolontha* on the oak; and the *Scarabæus solstitialis* at Midsummer. These peculiar birds can only be watched and observed for two hours in the twenty-four; and then in a dubious twilight, an hour after sun-set and an hour before sun-rise.

On this day (July 14, 1789) a woman brought me two eggs of a *fern-owl*, or *even-jarr*, which she found on the verge of the hanger, to the left of the hermitage under a beechen shrub. This person, who lives just at the foot of the hanger, seems well acquainted with these nocturnal swallows, and says she has often found their eggs near that place, and that they lay only two at a time on the bare ground. The eggs were oblong, dusky, and streaked somewhat in the

L

manner

manner of the plumage of the parent bird, and were equal in size at each end. The dam was sitting on the eggs when found, which contained the rudiments of young, and would have been hatched perhaps in a week. From hence we may see the time of their breeding, which corresponds pretty well with that of the swift, as does also the period of their arrival. Each species is usually seen about the beginning of May. Each breeds but once in a summer; each lays only two eggs.

July 4, 1790. The woman who brought me two *Fern-owls* eggs last year on July 14, on this day produced me two more, one of which had been laid this morning, as appears plainly, because there was only one in the nest the evening before. They were found, as last July, on the verge of the down above the hermitage under a beechen shrub,

on

on the naked ground.—Last year those eggs were full of young, and just ready to be hatched.

These circumstances point out the exact time when these curious nocturnal migratory birds lay their eggs, and hatch their young.

Fern-owls, like snipes, stone curlews, and some other birds, make no nest. Birds that build on the ground do not make much of nests.

SAND MARTINS.

MARCH 23, 1788. A gentleman who was this week on a visit at Waverley, took the opportunity of examining some of the holes in the sand banks with which that district abounds. As these are undoubtedly bored by bank-martins, and are the places where they avowedly breed, he was in hopes they

might have slept there also, and that he might have surpris'd them just as they were awaking from their winter slumbers. When he had dug for some time, he found the holes were horizontal, and serpentine, as I had observed before; and that the nests were deposited at the inner end, and had been occupied by broods in former summers: but no torpid birds were to be found. He opened and examined about a dozen holes. Another gentleman made the same search many years ago, with as little success.

These holes were in depth about two feet.

March 21, 1790. A single *bank* or *sand martin* was seen hovering and playing round the sand pit at Short heath, where in the summer they abound.

April 9, 1793. A sober hind assures us, that this day, on Wish-hanger common between

tween Hedleigh and Frinsham, he saw several *bank-martins* playing in and out, and hanging before some nest holes in a sand hill, where these birds usually nestle.

This incident confirms my suspicions, that this species of *hirundo* is to be seen first of any; and gives great reason to suppose that they do not leave their wild haunts at all, but are secreted amidst the clefts and caverns of those abrupt cliffs where they usually spend their summers.

The late severe weather considered, it is not very probable that these birds should have migrated so early from a tropical region, through all these cutting winds, and pinching frosts: but it is easy to suppose that they may, like bats and flies, have been awakened by the influence of the sun, amidst their secret latebræ where they have spent the
uncomfortable,

uncomfortable, foodless months in a torpid state, and the profoundest of slumbers.

There is a large pond at Wish-hanger which induces these *sand-martins* to frequent that district. For I have ever remarked that they haunt near great waters, either rivers, or lakes.

SWALLOWS, CONGREGATING, AND DISAPPEARANCE OF.

DURING the severe winds that often prevail late in the spring, it is not easy to say how the hirundines subsist: for they withdraw themselves, and are hardly ever seen, nor do any insects appear for their support. That they can retire to rest, and sleep away these uncomfortable periods, as the bats do, is a matter rather to be suspected than proved: or do they not rather spend their
time

time in deep and sheltered vales near waters, where insects are more likely to be found? Certain it is, that hardly any individuals of this genus have at such times been seen for several days together.

September 13, 1791. The congregating flocks of hirundines on the church and tower are very beautiful and amusing! When they fly off all together from the roof, on any alarm, they quite swarm in the air. But they soon settle in heaps, and preening their feathers, and lifting up their wings to admit the sun, seem highly to enjoy the warm situation. Thus they spend the heat of the day, preparing for their emigration, and as it were consulting when and where they are to go. The flight about the church seems to consist chiefly of house-martins, about 400 in number: but there are other places of

rendezvous about the village frequented at the same time.

It is remarkable, that though most of them sit on the battlements and roof, yet many hang or cling for some time by their claws against the surface of the walls, in a manner not practised by them at any other time of their remaining with us.

The swallows seem to delight more in holding their assemblies on trees.

Nov. 3, 1789. Two swallows were seen this morning at Newton vicarage house, hovering and settling on the roofs and out-buildings. None have been observed at Selborne since October 11. It is very remarkable, that after the hirundines have disappeared for some weeks, a few are occasionally seen again. Sometimes, in the first week in November, and that only for one day.

day. Do they not withdraw and slumber in some hiding place during the interval? for we cannot suppose they had migrated to warmer climes, and so returned again for one day. Is it not more probable that they are awakened from sleep, and like the bats are come forth to collect a little food? Bats appear at all seasons, through the autumn and spring months, when the thermometer is at 50, because then phalænæ, moths, are stirring.

These swallows looked like young ones.

WAGTAILS.

WHILE the cows are feeding in moist low pastures, broods of wagtails, white and grey, run round them, close up to their noses, and under their very bellies, availing themselves of the flies that settle on their legs, and probably finding worms and larvæ that are

M

roused

roused by the trampling of their feet. Nature is such an œconomist, that the most incongruous animals can avail themselves of each other ! interest makes strange friendships.

WRYNECK.

THESE birds appear on the grass-plots and walks ; they walk a little as well as hop, and thrust their bills into the turf, in quest, I conclude, of ants, which are their food. While they hold their bills in the grass, they draw out their prey with their tongues, which are so long as to be coiled round their heads.

GROSBEAK.

MR. B. shot a cock grosbeak which he had observed to haunt his garden for more than a fortnight. I began to accuse this bird of making sad havock among the buds

of the cherries, gooseberries, and wall fruit, of all the neighbouring orchards. Upon opening its crop or craw, no buds were to be seen; but a mass of kernels of the stones of fruits. Mr. B. observed that this bird frequented the spot where plum trees grow; and that he had seen it with somewhat hard in its mouth, which it broke with difficulty; these were the stones of damsons. The latin ornithologists call this bird *coccothraustes*, i. e. *berry-breaker*, because with its large, horny beak, it cracks and breaks the shells of stone fruits for the sake of the seed or kernel. Birds of this sort are rarely seen in England, and only in winter.

OBSERVATIONS ON QUADRUPEDS.

SHEEP.

THE sheep on the downs this winter (1769) are very ragged, and their coats much torn; the shepherds say they tear their fleeces with their own mouths and horns, and that they are always in that way in mild, wet winters, being teased and tickled with a kind of lice.

After ewes and lambs are shorn, there is great confusion and bleating, neither the dams nor the young being able to distinguish one another as before. This embarrassment seems not so much to arise from the loss of the

the fleece, which may occasion an alteration in their appearance, as from the defect of that *notus odor*, discriminating each individual personally; which also is confounded by the strong scent of the pitch and tar wherewith they are newly marked. For the brute creation recognize each other more from the *smell* than the *sight*; and in matters of identity and diversity, appeal much more to their noses, than to their eyes.

After sheep have been washed there is the same confusion, from the reason given above.

RABBITS.

RABBITS make incomparably the finest turf; for they not only bite closer than larger quadrupeds, but they allow no bents to rise: hence warrens produce much the most delicate turf for gardens. Sheep never touch the stalks of grasses.

CAT

CAT AND SQUIRRELS.

A BOY has taken three little young squirrels in their nest or *drey* as it is called in these parts. These small creatures he put under the care of a cat who had lately lost her kittens, and finds that she nurses and suckles them with the same assiduity and affection as if they were her own offspring. This circumstance corroborates my suspicion, that the mention of exposed and deserted children being nurtured by female beasts of prey who had lost their young, may not be so improbable an incident as many have supposed; and therefore may be a justification of those authors, who have gravely mentioned, what some have deemed to be a wild and improbable story.

So many people went to see the little squirrels suckled by a cat, that the foster
mother

mother became jealous of her charge, and in pain for their safety; and therefore hid them over the ceiling, where one died. This circumstance shews her affection for these foundlings, and that she supposes the squirrels to be her own young. Thus hens, when they have hatched ducklings, are equally attached to them as if they were their own chickens.

HORSE.

AN old hunting mare, which ran on the common, being taken very ill, ran down into the village, as it were to implore the help of men, and died the night following in the street.

HOUNDS.

THE king's stag-hounds came down to Alton, attended by a huntsman, and six yeomen

CAT AND SQUIRRELS.

A BOY has taken three little young squirrels in their nest or *drey* as it is called in these parts. These small creatures he put under the care of a cat who had lately lost her kittens, and finds that she nurses and suckles them with the same assiduity and affection as if they were her own offspring. This circumstance corroborates my suspicion, that the mention of exposed and deserted children being nurtured by female beasts of prey who had lost their young, may not be so improbable an incident as many have supposed; and therefore may be a justification of those authors, who have gravely mentioned, what some have deemed to be a wild and improbable story.

So many people went to see the little squirrels suckled by a cat, that the foster
mother

OBSERVATIONS ON QUADRUPEDS. 95

mother became jealous of her charge, and in pain for their safety; and therefore hid them over the ceiling, where one died. This circumstance shews her affection for these foundlings, and that she supposes the squirrels to be her own young. Thus hens, when they have hatched ducklings, are equally attached to them as if they were their own chickens.

HORSE.

AN old hunting mare, which ran on the common, being taken very ill, ran down into the village, as it were to implore the help of men, and died the night following in the street.

HOUNDS.

THE king's stag-hounds came down to Alton, attended by a huntsman, and six yeomen

men prickers, with horns, to try for the stag that has haunted Hartley wood and its environs for so long a time. Many hundreds of people, horse and foot, attended the dogs to see the deer unharboured; but though the huntsman drew Hartley wood, and long coppice, and shrubwood, and Temple hangers; and in their way back, Hartley and Ward-leham hangers, yet no stag could be found.

The royal pack, accustomed to have the deer turned out before them, never drew the coverts with any address and spirit, as many people that were present observed: and this remark the event has proved to be a true one. For as a person was lately pursuing a pheasant that was wing-broken, in Hartley wood, he stumbled upon the stag by accident, and ran in upon him as he lay concealed amidst a thick brake of brambles and bushes.

OBSERVATIONS ON INSECTS
AND VERMES.

INSECTS IN GENERAL.

THE day and night insects occupy the annuals alternately: the papilios, muscæ, and apes, are succeeded at the close of the day by phalænæ, earwigs, woodlice, &c. In the dusk of the evening, when beetles begin to buz, partridges begin to call; these two circumstances are exactly coincident.

Ivy is the last flower that supports the hymenopterous and dipterous insects. On sunny days quite on to November they swarm on trees covered with this plant; and when they disappear, probably retire under

N

the

the shelter of its leaves, concealing themselves between its fibres and the trees which it entwines.

Spiders, woodlice, *lepismæ* in cupboards and among sugar, some *empedes*, gnats, flies of several species, some *phalænæ* in hedges, earth-worms, &c. are stirring at all times when winters are mild; and are of great service to those soft-billed birds that never leave us.

On every funny day the winter through, clouds of insects usually called gnats (I suppose *tipulæ* and *empedes*) appear sporting and dancing over the tops of the ever-green trees in the shrubbery, and frisking about as if the business of generation was still going on. Hence it appears that these diptera (which by their sizes appear to be of different species) are not subject to a torpid state in the winter, as most winged insects are.

At

At night, and in frosty weather, and when it rains and blows, they seem to retire into those trees. They often are out in a fog.

HUMMING IN THE AIR.

THERE is a natural occurrence to be met with upon the highest part of our down in hot summer days, which always amuses me much, without giving me any satisfaction with respect to the cause of it; and that is a loud audible humming of bees in the air, though not one insect is to be seen. This sound is to be heard distinctly the whole common through, from the Money-dells, to Mr. White's avenue gate. Any person would suppose that a large swarm of bees was in motion, and playing about over his head. This noise was heard last week, on June 28th.

" Resounds the living surface of the ground,
Nor undelightful is the ceaseless hum
To him who muses ————— at noon."
" Thick in yon stream of light a thousand ways,
Upward and downward, thwarting and convolved,
The quivering nations sport."

Thomson's Seasons.

CHAFFERS.

COCKCHAFFERS seldom abound oftener than once in three or four years; when they swarm, they deface the trees and hedges. Whole woods of oaks are stripped bare by them.

Chaffers are eaten by the turkey, the rook, and the house-sparrow.

The scarabæus foliitialis first appears about June 26: they are very punctual in their coming out every year. They are a small species, about half the size of the *May chaffer*, and are known in some parts by the name of the *fern chaffer*.

PTINUS PECTINICORNIS.

THOSE maggots that make worm-holes in tables, chairs, bed-posts, &c. and destroy wooden furniture, especially where there is any sap, are the larvæ of the *Ptinus pectinicornis*. This insect, it is probable, deposits its eggs on the surface, and the worms eat their way in.

In their holes they turn into their pupæ state, and so come forth winged in July; eating their way through the valances or curtains of a bed, or any other furniture that happens to obstruct their passage.

They seem to be most inclined to breed in beech; hence beech will not make lasting utensils, or furniture. If their eggs are deposited on the surface, frequent rubbings will preserve wooden furniture.

BLATTA ORIENTALIS. COCKROACH.

A NEIGHBOUR complained to me that her house was over-run with a kind of *black beetle*, or, as she expressed herself, with a kind of *black-bob*, which swarmed in her kitchen when they get up in a morning before day break.

Soon after this account, I observed an unusual insect in one of my dark chimney closets, and find since, that in the night they swarm also in my kitchen. On examination, I soon ascertained the species to be the *blatta orientalis* of *Linnaeus*, and the *blatta molendinaria* of *Mouffet*. The male is winged; the female is not, but shows somewhat like the rudiments of wings, as if in the pupa state.

These insects belonged originally to the warmer parts of America, and were conveyed

veyed from thence by shipping to the East Indies; and by means of commerce begin to prevail in the more northern parts of Europe, as Russia, Sweden, &c. How long they have abounded in England I cannot say; but have never observed them in my house till lately.

They love warmth, and haunt chimney-closets, and the backs of ovens. *Poda* says that these and house crickets will not associate together; but he is mistaken in that assertion, as *Linnaeus* suspected he was. They are altogether night insects, *lucifugæ*, never coming forth till the rooms are dark and still, and escaping away nimbly at the approach of a candle. Their antennæ are remarkably long, slender, and flexile.

October, 1790. After the servants are gone to bed, the kitchen hearth swarms with young crickets, and young *blattæ molendinariæ*

of

of all sizes, from the most minute growth to their full proportions. They seem to live in a friendly manner together, and not to prey the one on the other.

August, 1792. After the destruction of many thousands of *blattæ molendinariæ*, we find that at intervals a fresh detachment of old ones arrives; and particularly during this hot season: for the windows being left open in the evenings, the males come flying in at the casements from the neighbouring houses, which swarm with them. How the females, that seem to have no perfect wings that they can use, can contrive to get from house to house, does not so readily appear. These, like many insects, when they find their present abodes over-stocked, have powers of migrating to fresh quarters. Since the *blattæ* have been so much kept under, the crickets have greatly increased in number.

GRYLLUS

GRYLLUS DOMEST. HOUSE CRICKET.

NOVEMBER. After the servants are gone to bed, the kitchen hearth swarms with minute crickets not so large as fleas, which must have been lately hatched. So that these domestic insects, cherished by the influence of a constant large fire, regard not the season of the year, but produce their young at a time when their congeners are either dead, or laid up for the winter, to pass away the uncomfortable months in the profoundest slumbers, and a state of torpidity.

When house-crickets are out, and running about in a room in the night, if surprised by a candle, they give two or three shrill notes, as it were for a signal to their fellows, that they may escape to their crannies and lurking holes, to avoid danger.

O

CIMEX

CIMEX LINEARIS.

AUGUST 12, 1775. *Cimices lineares* are now in high copulation on ponds and pools. The females, who vastly exceed the males in bulk, dart and shoot along on the surface of the water with the males on their backs. When a female chooses to be disengaged, she rears, and jumps, and plunges, like an unruly colt; the lover thus dismounted, soon finds a new mate. The females, as fast as their curiosities are satisfied, retire to another part of the lake, perhaps to deposit their foetus in quiet; hence the sexes are found separate, except where generation is going on. From the multitude of minute young of all gradations of sizes, these insects seem without doubt to be viviparous.

PHALÆNA

PHALÆNA QUERCUS.

MOST of our oaks are naked of leaves, and even the *Holt* in general, having been ravaged by the caterpillars of a small *phalæna* which is of a pale yellow colour. These insects, though a feeble race, yet from their infinite numbers are of wonderful effect, being able to destroy the foliage of whole forests and districts. At this season they leave their *aurelia*, and issue forth in their *fly*-state, swarming and covering the trees and hedges.

In a field at Greatham, I saw a flight of *swifts* busied in catching their prey near the ground; and found they were hawking after these *phalænæ*. The *aurelia* of this moth is shining and as black as jet; and lies wrapped up in a leaf of the tree, which is rolled round it, and secured at the ends by a web, to prevent the egg from falling out.

EPHEMERA CAUDA BISETA. MAY
FLY.

JUNE 10, 1771. Myriads of May flies appear for the first time on the Alresford stream. The air was crowded with them, and the surface of the water covered. Large trouts sucked them in as they lay struggling on the surface of the stream, unable to rise till their wings were dried.

This appearance reconciled me in some measure to the wonderful account that Scopoli gives of the quantities emerging from the rivers of Carniola. Their motions are very peculiar, up and down for many yards almost in a perpendicular line.

SPHYNX OCELLATA?

A VAST insect appears after it is dusk, flying with a humming noise, and inserting its
tongue

tongue into the bloom of the honey-suckle; it scarcely settles upon the plants, but feeds on the wing in the manner of humming birds.

WILD BEE.

THERE is a sort of wild bee frequenting the garden-campion for the sake of its tomentum, which probably it turns to some purpose in the business of nidification. It is very pleasant to see with what address it strips off the pubes, running from the top to the bottom of a branch, and shaving it bare with all the dexterity of a hoop-shaver. When it has got a vast bundle, almost as large as itself, it flies away, holding it secure between its chin and its fore legs.

There is a remarkable hill on the downs near *Lewes* in *Sussex*, known by the name of *Mount Carburn*, which overlooks that town,
and

and affords a most engaging prospect of all the country round, besides several views of the sea. On the very summit of this exalted promontory, and amidst the trenches of its Danish camp, there haunts a species of wild bee, making its nest in the chalky soil. When people approach the place, these insects begin to be alarmed, and with a sharp and hostile sound, dash and strike round the heads and faces of intruders. I have often been interrupted myself while contemplating the grandeur of the scenery around me, and have thought myself in danger of being stung.

WASPS.

WASPS abound in woody wild districts far from neighbourhoods; they feed on flowers, and catch flies and caterpillars, to carry to their young. Wasps make their nests with

with the raspings of sound timber; hornets, with what they gnaw from decayed: these particles of wood are kneaded up with a mixture of saliva from their bodies, and moulded into combs.

When there is no fruit in the gardens, wasps eat flies, and suck the honey from flowers, from ivy blossoms, and umbellated plants: they carry off also flesh from butchers shambles.

OESTRUS CURVICAUDA.

THIS insect lays its nits or eggs on horses' legs, flanks, &c. each on a single hair. The maggots when hatched do not enter the horses' skins, but fall to the ground. It seems to abound most in moist, moorish places, though sometimes seen in the uplands.

NOSE FLY.

ABOUT the beginning of July, a species of fly (*musca*) obtains, which proves very tormenting to horses, trying still to enter their nostrils and ears, and actually laying their eggs in the latter of those organs, or perhaps in both. When these abound, horses in woodland districts become very impatient at their work, continually tossing their heads, and rubbing their noses on each other, regardless of the driver, so that accidents often ensue. In the heat of the day, men are often obliged to desist from plowing. Saddle-horses are also very troublesome at such seasons. Country people call this insect the *nose fly*.

ICHNEUMON FLY.

I saw lately a small Ichneumon fly attack a spider much larger than itself on a
grass

grass walk. When the spider made any resistance, the Ichneumon applied her tail to him, and stung him with great vehemence, so that he soon became dead and motionless. The Ichneumon then running backward drew her prey very nimbly over the walk into the standing grass. This spider would be deposited in some hole where the Ichneumon would lay some eggs; and as soon as the eggs were hatched, the carcase would afford ready food for the maggots.

Perhaps some eggs might be injected into the body of the spider, in the act of stinging. Some Ichneumons deposit their eggs in the aurelia of moths and butterflies.

BOMBYLIUS MEDIUS.

THE *bombylius medius* is much about in March and the beginning of April, and soon seems to retire. It is an hairy insect, like

P

an

an humble-bee, but with only two wings, and a long straight beak, with which it sucks the early flowers. The female seems to lay its eggs as it poises on its wings, by striking its tail on the ground, and against the grass that stands in its way, in a quick manner, for several times together.

MUSCÆ.—FLIES.

IN the decline of the year, when the mornings and evenings become chilly, many species of flies (*muscæ*) retire into houses, and swarm in the windows.

At first they are very brisk and alert; but as they grow more torpid, one cannot help observing that they move with difficulty, and are scarce able to lift their legs, which seem as if glued to the glass; and by degrees many do actually stick on till they die in the place.

It

It has been observed that divers flies, besides their sharp, hooked nails, have also skinny palms, or flaps to their feet, whereby they are enabled to stick on glass and other smooth bodies, and to walk on ceilings with their backs downward by means of the pressure of the atmosphere on those flaps: the weight of which they easily overcome in warm weather when they are brisk and alert. But in the decline of the year, this resistance becomes too mighty for their diminished strength; and we see flies labouring along, and lugging their feet in windows as if they stuck fast to the glass, and it is with the utmost difficulty they can draw one foot after another, and disengage their hollow caps from the slippery surface.

Upon the same principle that flies stick and support themselves, do boys, by way of play, carry heavy weights by only a piece of

wet leather at the end of a string clapped close on the surface of a stone.

TIPULÆ, OR EMPEDES.

MILLIONS of *empedes*, or *tipulæ*, come forth at the close of day, and swarm to such a degree as to fill the air. At this juncture they sport and copulate; as it grows more dark they retire. All day they hide in the hedges. As they rise in a cloud they appear like smoke.

I do not ever remember to have seen such swarms, except in the fens of the Isle of Ely. They appear most over grass grounds.

ANTS.

AUGUST 23. Every ant-hill about this time is in a strange hurry and confusion; and all the winged ants, agitated by some violent impulse, are leaving their homes, and, bent
on

on emigration, swarm by myriads in the air, to the great emolument of the hirundines, which fare luxuriously. Those that escape the swallows return no more to their nests, but looking out for fresh settlements, lay a foundation for future colonies. All the females at this time are pregnant: the males that escape being eaten, wander away and die.

October 2. Flying-ants, male and female, usually swarm and migrate on hot sunny days in August and September; but this day a vast emigration took place in my garden, and myriads came forth, in appearance from the drain which goes under the fruit wall; filling the air and the adjoining trees and shrubs with their numbers. The females were full of eggs. This late swarming is probably owing to the backward, wet season.

season. The day following, not one flying ant was to be seen.

Horfe-ants travel home to their nests laden with flies, which they have caught, and the aureliæ of smaller ants, which they seize by violence.

GLOW WORMS.

By observing two glow-worms which were brought from the field to the bank in the garden, it appeared to us, that these little creatures put out their lamps between eleven and twelve, and shine no more for the rest of the night.

Male glow-worms, attracted by the light of the candles, come into the parlour.

EARTH WORMS.

EARTH worms make their casts most in mild weather about March and April; they
do

do not lie torpid in winter, but come forth when there is no frost; they travel about in rainy nights, as appears from their sinuous tracks on the soft muddy soil, perhaps in search of food.

When earth-worms lie out a-nights on the turf, though they extend their bodies a great way, they do not quite leave their holes, but keep the ends of their tails fixed therein, so that on the least alarm they can retire with precipitation under the earth. Whatever food falls within their reach when thus extended, they seem to be content with, such as blades of grass, straws, fallen leaves, the ends of which they often draw into their holes; even in copulation their hinder parts never quit their holes; so that no two, except they lie within reach of each other's bodies, can have any commerce of that kind; but as every individual is an hermaphrodite,
there

there is no difficulty in meeting with a mate, as would be the case were they of different sexes.

SNAILS AND SLUGS.

THE shell-less snails called slugs are in motion all the winter in mild weather, and commit great depredations on garden plants, and much injure the green wheat, the loss of which is imputed to earth worms; while the shelled snail, the *Φερεοικος*, does not come forth at all till about April 10th, and not only lays itself up pretty early in autumn, in places secure from frost, but also throws out round the mouth of its shell a thick operculum formed from its own saliva; so that it is perfectly secured, and corked up as it were, from all inclemencies. The cause why the slugs are able to endure the cold so much better than shell snails is,
that

that their bodies are covered with slime as whales are with blubber.

Snails copulate about Midsummer; and soon after, deposit their eggs in the mould by running their heads and bodies under ground. Hence the way to be rid of them is to kill as many as possible before they begin to breed.

Large, grey, shell-less, cellar snails lay themselves up about the same time with those that live abroad; hence it is plain that a defect of warmth is not the only cause that influences their retreat.

SNAKES SLOUGH.

—There the snake throws her enamel'd skin.

Shakespeare, Midf. Night's Dream.

ABOUT the middle of this month (September) we found in a field near a hedge the slough of a large snake, which seemed

Q

to

to have been newly cast. From circumstances it appeared as if turned wrong side outward, and as drawn off backward, like a stocking or woman's glove. Not only the whole skin, but scales from the very eyes, are peeled off, and appear in the head of the slough like a pair of spectacles. The reptile, at the time of changing his coat, had entangled himself intricately in the grass and weeds, so that the friction of the stalks and blades might promote this curious shifting of his exuviae.

—————“*Lubrica serpens*
“*Exiit in spinis vestem.*” *Lucret.*

It would be a most entertaining sight could a person be an eye-witness to such a feat, and see the snake in the act of changing his garment. As the convexity of the scales of the eyes in the slough is now inward, that circumstance alone is a proof that
the

the skin has been turned: not to mention that now the present inside is much darker than the outer. If you look through the scales of the snake's eyes from the concave side, viz. as the reptile used them, they lessen objects much. Thus it appears from what has been said, that snakes crawl out of the mouth of their own sloughs, and quit the tail part last, just as eels are skinned by a cook maid. While the scales of the eyes are growing loose, and a new skin is forming, the creature, in appearance, must be blind, and feel itself in an awkward uneasy situation.

OBSERVATIONS ON VEGETABLES.

TREES, ORDER OF LOSING THEIR
LEAVES.

ONE of the first trees that becomes naked is the walnut; the mulberry, the ash, especially if it bears many keys, and the horse-chestnut, come next. All lopped trees, while their heads are young, carry their leaves a long while. Apple-trees and peaches remain green till very late, often till the end of November: young beeches never cast their leaves till spring, till the new leaves sprout and push them off: in the autumn the beechen-leaves turn of a deep chestnut colour.

colour. Tall beeches cast their leaves about the end of October.

SIZE AND GROWTH.

MR. MARSHAM of Stratton, near Norwich, informs me by letter thus: "I became a planter early; so that an oak which I planted in 1720 is become now, at 1 foot from the earth, 12 feet 6 inches in circumference, and at 14 feet (the half of the timber length) is 8 feet 2 inches. So if the bark was to be measured as timber, the tree gives $116\frac{1}{2}$ feet, buyers measure. Perhaps you never heard of a larger oak while the planter was living. I flatter myself that I increased the growth by washing the stem, and digging a circle as far as I supposed the roots to extend, and by spreading saw-dust, &c. as related in the Phil. Trans. I wish I had begun with beeches (my favourite trees

trees as well as yours), I might then have seen very large trees of my own raising. But I did not begin with beech till 1741, and then by seed; so that my largest is now at five feet from the ground, 6 feet 3 inches in girth, and with its head spreads a circle of 20 yards diameter. This tree was also dug round, washed, &c." *Stratton, 24 July, 1790.*

The circumference of trees planted by myself at 1 foot from the ground (1790).

				feet.	inches.
Oak in	1730	-	-	4	5
Ash	1730	-	-	4	6 $\frac{1}{2}$
Great fir	1751	-	-	5	0
Greatest beech	1751	-	-	4	0
Elm	1750	-	-	5	3
Lime	1756	-	-	5	5

The great oak in the Holt, which is deemed by Mr. Marsham to be the biggest
in

in this island, at 7 feet from the ground, measures in circumference 34 feet. It has in old times lost several of its boughs, and is tending to decay. Mr. Marham computes, that at 14 feet length this oak contains 1000 feet of timber.

It has been the received opinion that trees grow in height only by their annual upper shoot. But my neighbour over the way, whose occupation confines him to one spot, assures me, that trees are expanded and raised in the lower parts also. The reason that he gives is this; the point of one of my firs began for the first time to peep over an opposite roof at the beginning of summer; but before the growing season was over, the whole shoot of the year, and three or four joints of the body beside, became visible to him as he sits on his form in his shop. According to this supposition, a tree
may

128 OBSERVATIONS ON VEGETABLES.

may advance in height considerably, though the summer shoot should be destroyed every year.

FLOWING OF SAP.

If the bough of a vine is cut late in the spring, just before the shoots push out, it will bleed considerably; but after the leaf is out, any part may be taken off without the least inconvenience. So oaks may be barked while the leaf is budding; but as soon as they are expanded, the bark will no longer part from the wood, because the sap that lubricates the bark and makes it part, is evaporated off through the leaves.

RENOVATION OF LEAVES.

When oaks are quite stripped of their leaves by chaffers, they are clothed again soon after Midsummer with a beautiful

4 foliage:

OBSERVATIONS ON VEGETABLES. 129

foliage: but beeches, horse-chestnuts and maples, once defaced by those insects, never recover their beauty again for the whole season.

ASH TREES.

MANY ash trees bear loads of keys every year, others never seem to bear any at all. The prolific ones are naked of leaves and unsightly; those that are sterile abound in foliage, and carry their verdure a long while, and are pleasing objects.

SYCAMORE.

MAY 12. The sycamore or great maple is in bloom, and at this season makes a beautiful appearance, and affords much pabulum for bees, smelling strongly like honey. The foliage of this tree is very fine, and

R very

130 OBSERVATIONS ON VEGETABLES.

very ornamental to outlets. All the maples have saccharine juices.

GALLS OF LOMBARDY POPLAR.

THE stalks and ribs of the leaves of the Lombardy poplar are embossed with large tumours of an oblong shape, which by in-curious observers have been taken for the fruit of the tree. These galls are full of small insects, some of which are winged, and some not. The parent insect is of the genus of *cynips*. Some poplars in the garden are quite loaded with these excrescences.

CHESTNUT TIMBER.

JOHN CARPENTER brings home some old chestnut trees which are very long; in several places the wood-peckers had begun to bore them. The timber and bark of these

OBSERVATIONS ON VEGETABLES. 131

trees are so very like oak, as might easily deceive an indifferent observer, but the wood is very shakey, and towards the heart *cup-shakey*, (that is to say, apt to separate in round pieces like cups) so that the inward parts are of no use. They were bought for the purpose of cooperage, but must make but ordinary barrels, buckets, &c. Chestnut fells for half the price of oak; but has sometimes been sent into the king's docks, and passed off instead of oak.

LIME BLOSSOMS.

DR. CHANDLER tells that in the south of France, an infusion of the blossoms of the lime tree, *tilia*, is in much esteem as a remedy for coughs, hoarshnesses, fevers, &c. and that at Nismes he saw an avenue of limes that was quite ravaged and torn in pieces by people greedily gathering the

R 2

bloom,

132 OBSERVATIONS ON VEGETABLES.

bloom, which they dried and kept for these purposes.

Upon the strength of this information we made some tea of lime blossoms, and found it a very soft, well-flavoured, pleasant, saccharine julep, in taste much resembling the juice of liquorice.

BLACKTHORN.

THIS tree usually blossoms while cold N. E. winds blow; so that the harsh rugged weather obtaining at this season, is called by the country people, blackthorn winter.

IVY BERRIES.

IVY berries afford a noble and providential supply for birds in winter and spring! for the first severe frost freezes and spoils all the haws, sometimes by the middle of November; ivy berries do not seem to freeze.

HOPS.

HOPS.

THE culture of Virgil's vines corresponded very exactly with the modern management of hops. I might instance in the perpetual diggings and hoeings, in the tying to the stakes, and poles, in pruning the superfluous shoots, &c. but lately I have observed a new circumstance, which was a neighbouring farmer's harrowing between the rows of hops with a small triangular harrow, drawn by one horse, and guided by two handles. This occurrence brought to my mind the following passage.

“ ipfa
 “ Flectere luctantes inter vineta juvencos.”
Georgic. II.

Hops are diécious plants: hence perhaps it might be proper, though not practised, to leave purposely some male plants in every garden,

134 OBSERVATIONS ON VEGETABLES.

garden, that their farina might impregnate the blossoms. The female plants without their male attendants are not in their natural state: hence we may suppose the frequent failure of crop so incident to hop-grounds; no other growth, cultivated by man, has such frequent and general failures as hops.

Two hop gardens much injured by a hail storm, June 5, shew now (September 2) a prodigious crop, and larger and fairer hops than any in the parish. The owners seem now to be convinced that the hail, by beating off the tops of the binds, has increased the side-shoots, and improved the crop. Query. Therefore should not the tops of hops be pinched off when the binds are very gross, and strong?

SEED LYING DORMANT.

THE naked part of the Hanger is now covered with thistles of various kinds. The
feeds

OBSERVATIONS ON VEGETABLES. 135

seeds of these thistles may have lain probably under the thick shade of the beeches for many years, but could not vegetate till the sun and air were admitted. When old beech trees are cleared away, the naked ground in a year or two becomes covered with strawberry plants, the seeds of which must have lain in the ground for an age at least. One of the *slidders* or trenches down the middle of the Hanger, close covered over with lofty beeches near a century old, is still called *strawberry slider*, though no strawberries have grown there in the memory of man. That sort of fruit did once, no doubt, abound there, and will again when the obstruction is removed.

BEANS SOWN BY BIRDS.

MANY horse-beans sprang up in my field-walks in the autumn, and are now grown to a considerable

136 OBSERVATIONS ON VEGETABLES.

a considerable height. As the Ewel was in beans last summer, it is most likely that these seeds came from thence; but then the distance is too considerable for them to have been conveyed by mice. It is most probable therefore that they were brought by birds, and in particular by jays and pies, who seem to have hid them among the grass and moss, and then to have forgotten where they had stowed them. Some pease are growing also in the same situation, and probably under the same circumstances.

CUCUMBERS SET BY BEES.

If bees, who are much the best setters of cucumbers, do not happen to take kindly to the frames, the best way is to tempt them by a little honey put on the male and female bloom. When they are once induced to haunt the frames, they set all the fruit, and
will

will hover with impatience round the lights in a morning, till the glaffes are opened. Probatum est.

WHEAT.

A NOTION has always obtained, that in England hot summers are productive of fine crops of wheat; yet in the years 1780 and 1781, though the heat was intense, the wheat was much mildewed, and the crop light. Does not severe heat, while the straw is milky, occasion its juices to exude, which being extravasated, occasion spots, discolour the stems and blades, and injure the health of the plants?

TRUFFLES.

AUGUST. A truffle-hunter called on us, having in his pocket several large truffles found in this neighbourhood. He says these

S

roots

138 OBSERVATIONS ON VEGETABLES.

roots are not to be found in deep woods, but in narrow hedge-rows and the skirts of coppices. Some truffles, he informed us, lie two feet within the earth, and some quite on the surface; the latter, he added, have little or no smell, and are not so easily discovered by the dogs as those that lie deeper. Half a crown a pound was the price which he asked for this commodity.

Truffles never abound in wet winters and springs. They are in season in different situations, at least nine months in the year.

TREMELLA NOSTOC.

THOUGH the weather may have been ever so dry and burning, yet after two or three wet days, this jelly-like substance abounds on the walks.

FAIRY

FAIRY RINGS.

THE cause, occasion, call it what you will, of *fairy-rings*, subsists in the turf, and is conveyable with it: for the turf of my garden-walks, brought from the down above, abounds with those appearances, which vary their shape, and shift situation continually, discovering themselves now in circles, now in segments, and sometimes in irregular patches and spots. Wherever they obtain, puff-balls abound; the seeds of which were doubtless brought in the turf.

METEOROLOGICAL OBSERVATIONS.

BAROMETER.

NOVEMBER 22, 1768. A remarkable fall of the barometer all over the kingdom. At Selborne we had no wind, and not much rain; only vast, swagging, rock-like clouds, appeared at a distance.

PARTIAL FROST.

THE country people, who are abroad in winter mornings long before sun-rise, talk much of hard frost in some spots, and none in others. The reason of these partial frosts is obvious, for there are at such times partial

tial fogs about; where the fog obtains, little or no frost appears: but where the air is clear, there it freezes hard. So the frost takes place either on hill or in dale, wherever the air happens to be clearest, and freest from vapour.

THAW.

THAWS are sometimes surprisngly quick, considering the small quantity of rain. Does not the warmth at such times come from below? The cold in still, severe seasons seems to come down from above: for the coming over of a cloud in severe nights raises the thermometer abroad at once full ten degrees. The first notices of thaws often seem to appear in vaults, cellars, &c.

If a frost happens, even when the ground is considerably dry, as soon as a thaw takes

142 METEOROLOGICAL OBSERVATIONS.

place, the paths and fields are all in a batter. Country people say that the frost draws moisture. But the true philosophy is, that the steam and vapours continually ascending from the earth, are bound in by the frost, and not suffered to escape till released by the thaw. No wonder then that the surface is all in a float; since the quantity of moisture by evaporation that arises daily from every acre of ground is astonishing.

FROZEN SLEET.

JANUARY 20. Mr. H.'s man says that he caught this day in a lane near Hackwood park, many rooks, which, attempting to fly, fell from the trees with their wings frozen together by the sleet, that froze as it fell. There were, he affirms, many dozen so disabled.

MIST,

MIST, CALLED LONDON SMOKE

THIS is a blue mist which has somewhat the smell of coal smoke, and as it always comes to us with a N. E. wind, is supposed to come from London. It has a strong smell, and is supposed to occasion blights. When such mists appear they are usually followed by dry weather.

REFLECTION OF FOG.

WHEN people walk in a deep white fog by night with a lanthorn, if they will turn their backs to the light, they will see their shades impressed on the fog in rude gigantic proportions. This phenomenon seems not to have been attended to, but implies the great density of the meteor at that juncture.

HONEY

144 METEOROLOGICAL OBSERVATIONS.

HONEY DEW.

JUNE 4, 1783. Vast honey dews this week. The reason of these seem to be, that in hot days the effluvia of flowers are drawn up by a brisk evaporation, and then in the night fall down with the dews with which they are entangled.

This clammy substance is very grateful to bees, who gather it with great assiduity, but it is injurious to the trees on which it happens to fall, by stopping the pores of the leaves. The greatest quantity falls in still close weather; because winds disperse it, and copious dews dilute it, and prevent its ill effects. It falls mostly in hazy warm weather.

MORNING

MORNING CLOUDS.

AFTER a bright night and vast dew, the sky usually becomes cloudy by eleven or twelve o'clock in the forenoon, and clear again towards the decline of the day. The reason seems to be, that the dew, drawn up by evaporation, occasions the clouds; which, towards evening, being no longer rendered buoyant by the warmth of the sun, melt away, and fall down again in dews. If clouds are watched in a still warm evening, they will be seen to melt away, and disappear.

DRIPPING WEATHER AFTER DROUGHT.

No one that has not attended to such matters, and taken down remarks, can be aware how much ten days dripping weather

T

will

146 METEOROLOGICAL OBSERVATIONS.

will influence the growth of grafs or corn after a fevere dry season. This present summer, 1776, yielded a remarkable instance; for till the 30th of May the fields were burnt up and naked, and the barley not half out of the ground; but now, June 10, there is an agreeable prospect of plenty.

AURORA BOREALIS.

NOVEMBER 1, 1787. The N. aurora made a particular appearance, forming itself into a broad, red, fiery belt, which extended from E. to W. across the welkin: but the moon rising at about ten o'clock, in unclouded majesty, in the E. put an end to this grand, but awful meteorous phenomenon.

BLACK

BLACK SPRING, 1771.

DR. JOHNSON says, that "in 1771 the season was so severe in the island of Sky, that it is remembered by the name of the *black spring*. The snow, which seldom lies at all, covered the ground for eight weeks, many cattle died, and those that survived were so emaciated that they did not require the male at the usual season." The case was just the same with us here in the south; never were so many barren cows known as in the spring following that dreadful period. Whole dairies missed being in calf together.

At the end of March the face of the earth was naked to a surprising degree. Wheat hardly to be seen, and no signs of any grass; turneps all gone, and sheep in a starving way. All provisions rising in price. Farmers cannot sow for want of rain.

ON THE DARK, STILL, DRY, WARM
WEATHER

OCCASIONALLY HAPPENING IN THE WINTER MONTHS.

Th' imprison'd winds slumber within their caves
Fast bound: the fickle vane, emblem of change,
Wavers no more, long-settling to a point.

All nature nodding seems compos'd: thick steams
From land, from flood up-drawn, dimming the day,
"Like a dark ceiling stand:" flow thro' the air
Gossamer floats, or stretch'd from blade to blade
The wavy net-work whitens all the field.

Push'd by the weightier atmosphere, up springs
The ponderous Mercury, from scale to scale
Mounting, amidst the Torricellian tube*.

While high in air, and pois'd upon his wings
Unseen, the soft, enamour'd wood-lark runs
Thro' all his maze of melody;—the brake
Loud with the black-bird's bolder note resounds.

Sooth'd by the genial warmth, the cawing rook
Anticipates the spring, selects her mate,
Haunts her tall nest-trees, and with sedulous care
Repairs her wicker eyrie, tempest-torn.

* The Barometer.

The

METEOROLOGICAL OBSERVATIONS. 149

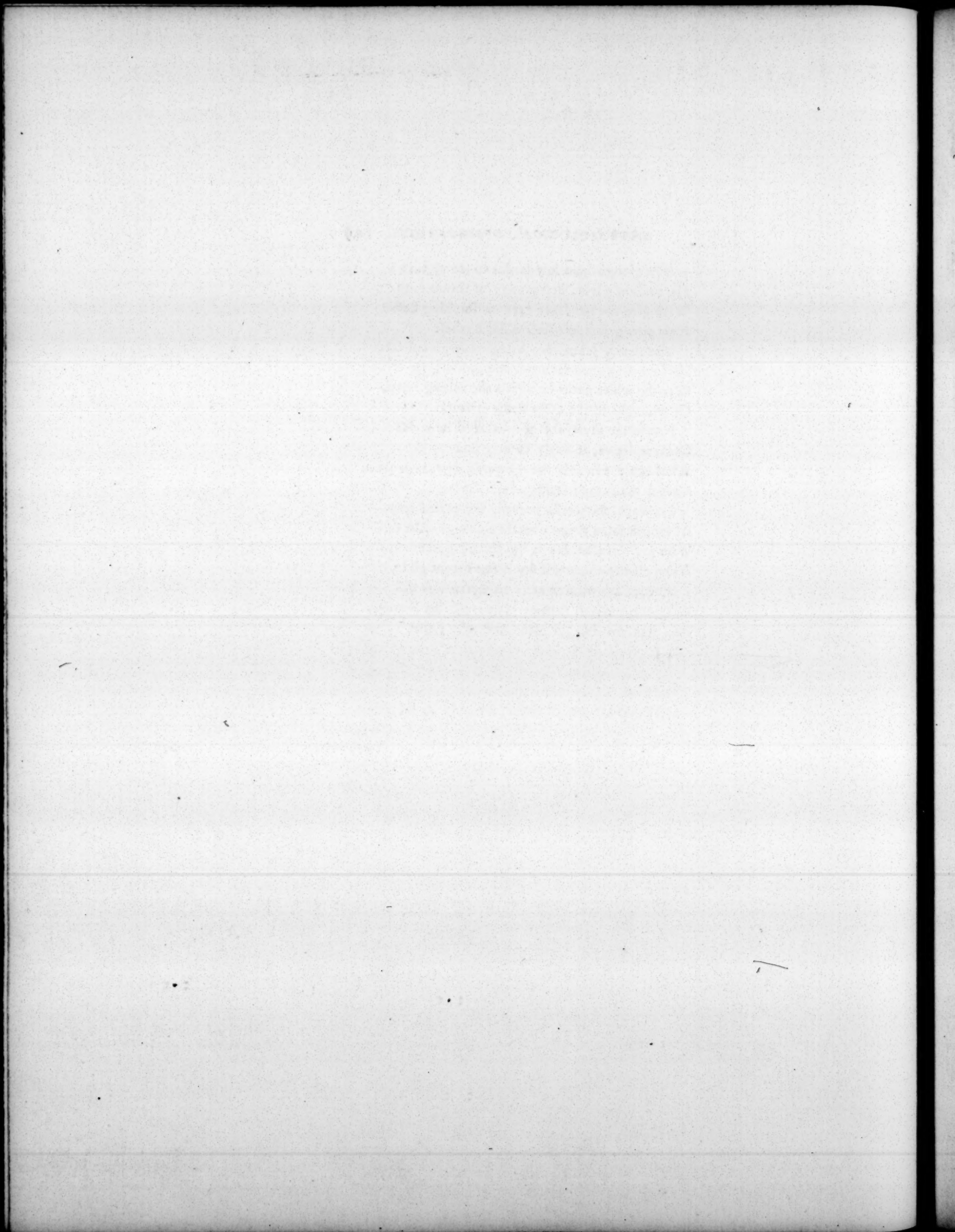
The plough-man inly smiles to see up turn
His mellow glebe, best pledge of future crop :
With glee the gardener eyes his smoking beds :
E'en pining sickness feels a short relief.

The happy school-boy brings transported forth
His long-forgotten scourge, and giddy gig :
O'er the white paths he whirls the rolling hoop,
Or triumphs in the dusty fields of taw.

Not so the museful sage :—abroad he walks
Contemplative, if haply he may find
What cause controls the tempest's rage, or whence
Amidst the savage season winter smiles.

For days, for weeks prevails the placid calm.
At length some drops prelude a change : the sun
With ray refracted bursts the parting gloom ;
When all the chequer'd sky is one bright glare.

Mutters the wind at eve : th' horizon round
With angry aspect scowls : down rush the showers,
And float the delug'd paths, and miry fields.



SUMMARY
OF THE
WEATHER.

Measure of Rain in Inches and Hundreds.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1782.	4.64	1.98	6.54	4.57	6.34	1.75	7.09	8.28	3.72	1.93	2.51	0.91	50.26
1783.	4.43	5.54	2.16	0.88	2.84	2.82	1.45	2.24	5.52	1.71	3.01	1.10	33.71
1784.	3.18	0.77	3.82	3.92	1.52	3.65	2.40	3.88	2.51	0.39	4.70	3.06	33.80
1785.	2.84	1.80	0.30	0.17	0.60	1.39	3.80	3.21	5.94	5.21	2.27	4.2	31.55
1786.	6.91	1.42	1.62	1.81	2.40	1.20	1.99	4.34	4.79	5.4	4.38	---	---
1787.	0.88	3.67	4.28	0.74	2.60	1.50	6.53	0.83	1.56	5.4	4.9	5.6	36.24
1788.	1.60	3.37	1.31	0.61	0.76	1.27	3.58	3.22	5.71	0.0	0.86	0.23	22.50
1789.	4.48	4.11	2.47	1.81	4.5	4.24	3.69	0.99	2.82	5.4	3.67	4.62	42.---
1790.	1.99	0.49	0.45	3.64	4.38	0.13	3.24	2.30	0.66	2.10	6.95	5.94	32.27
1791.	6.73	4.64	1.59	1.13	1.33	0.91	5.56	1.73	1.73	6.49	8.16	4.93	44.93
1792.	6.7	1.68	6.70	4.08	3.00	2.78	5.16	4.25	5.53	5.55	1.65	2.11	48.56
1793.	3.71	2.32	3.33	3.19	1.21								

(153)

S U M M A R Y
OF THE
W E A T H E R.

1768 begins with a fortnight's frost and snow; rainy during February. Cold and wet spring; wet season from the beginning of June to the end of harvest. Latter end of September foggy, without rain. All October and the first part of November rainy; and thence to the end of the year alternate rains and frosts.

1769. January and February, frosty and rainy, with gleams of fine weather in the intervals. To the middle of March, wind and rain. To the end of March, dry and windy. To the middle of April, stormy,
U with

154 SUMMARY OF THE WEATHER.

with rain. To the end of June, fine weather, with rain. To the beginning of August, warm, dry weather. To the end of September, rainy with short intervals of fine weather. To the latter end of October, frosty mornings, with fine days. The next fortnight rainy; thence to the end of November dry and frosty. December, windy, with rain and intervals of frost, and the first fortnight very foggy.

1770. Frost for the first fortnight: during the 14th and 15th all the snow melted. To the end of February, mild hazy weather. The whole of March frosty, with bright weather. April, cloudy, with rain and snow. May began with summer showers, and ended with dark cold rains. June, rainy, checquered with gleams of sunshine. The first fortnight in July, dark and sultry; the latter part of the month, heavy rain.

August,

SUMMARY OF THE WEATHER. 155

August, September, and the first fortnight in October, in general fine weather, though with frequent interruptions of rain: from the middle of October to the end of the year almost incessant rains.

1771. Severe frost till the last week in January. To the first week in February, rain and snow: to the end of February, spring weather. To the end of the third week in April, frosty weather. To the end of the first fortnight in May, spring weather, with copious showers. To the end of June, dry, warm weather. The first fortnight in July, warm, rainy weather. To the end of September, warm weather, but in general cloudy, with showers. October, rainy. November, frost, with intervals of fog and rain. December, in general bright, mild weather, with hoar frosts.

1772. To the end of the first week in

U 2

February,

156 SUMMARY OF THE WEATHER.

February, frost and snow. To the end of the first fortnight in March, frost, sleet, rain and snow. To the middle of April, cold rains. To the middle of May, dry weather, with cold piercing winds. To the end of the first week in June, cool showers. To the middle of August, hot dry summer weather. To the end of September, rain with storms and thunder. To December 22, rain with mild weather. December 23, the first ice. To the end of the month, cold foggy weather.

1773. The first week in January, frost; thence to the end of the month, dark rainy weather. The first fortnight in February, hard frost. To the end of the first week in March, misty, showery weather. Bright spring days to the close of the month. Frequent showers to the latter end of April. To the end of June, warm showers, with intervals

SUMMARY OF THE WEATHER. 157

intervals of sunshine. To the end of August, dry weather, with a few days of rain. To the end of the first fortnight in November, rainy. The next four weeks, frost: and thence to the end of the year, rainy.

1774. Frost and rain to the end of the first fortnight in March: thence to the end of the month, dry weather. To the 15th of April, showers; thence to the end of April, fine spring days. During May, showers and sunshine in about an equal proportion. Dark rainy weather to the end of the 3d week in July: thence to the 24th of August, sultry, with thunder and occasional showers. To the end of the 3d week in November, rain, with frequent intervals of sunny weather. To the end of December, dark dripping fogs.

1775. To the end of the first fortnight in March, rain almost every day. To the first

158 SUMMARY OF THE WEATHER.

first week in April, cold winds, with showers of rain and snow. To the end of June, warm, bright weather, with frequent showers. The first fortnight in July, almost incessant rains. To the 26th August, sultry weather with frequent showers. To the end of the 3d week in September, rain, with a few intervals of fine weather. To the end of the year, rain, with intervals of hoar-frost and sunshine.

1776. To January 24, dark frosty weather, with much snow. March 24, to the end of the month, foggy, with hoar frost. To the 30th of May, dark, dry harsh weather, with cold winds. To the end of the first fortnight in July, warm, with much rain. To the end of the first week in August, hot and dry, with intervals of thunder showers. To the end of October, in general fine seasonable weather, with a considerable

SUMMARY OF THE WEATHER. 159

able proportion of rain. To the end of the year, dry, frosty weather, with some days of hard rain.

1777. To the 10th of January, hard frost. To the 20th of January, foggy, with frequent showers. To the 18th of February, hard dry frost with snow. To the end of May, heavy showers, with intervals of warm dry spring days. To the 8th July, dark, with heavy rain. To the 18th July, dry, warm weather. To the end of July, very heavy rains. To the 12th October, remarkably fine warm weather. To the end of the year, grey mild weather, with but little rain, and still less frost.

1778. To the 13th of January, frost, with a little snow: to the 24th January, rain: to the 30th, hard frost. To the 23d February, dark, harsh, foggy weather, with rain. To the end of the month, hard frost,
with

160 SUMMARY OF THE WEATHER.

with snow. To the end of the first fortnight in March, dark, harsh weather. From the first, to the end of the first fortnight in April, spring weather. To the end of the month, snow and ice. To the 11th of June, cool, with heavy showers. To the 19th July, hot, sultry, parching weather. To the end of the month, heavy showers. To the end of September, dry warm weather. To the end of the year, wet, with considerable intervals of sunshine.

1779. Frost and showers to the end of January. To 21st April, warm dry weather. To 8th May, rainy. To the 7th June, dry and warm. To the 6th July, hot weather, with frequent rain. To the 18th July, dry hot weather. To August 8, hot weather, with frequent rains. To the end of August, fine dry harvest weather. To the end of November, fine autumnal weather,

SUMMARY OF THE WEATHER. 161

with intervals of rain. To the end of the year, rain with frost and snow.

1780. To the end of January, frost. To the end of February, dark, harsh weather, with frequent intervals of frost. To the end of March, warm showery spring weather. To the end of April, dark harsh weather, with rain and frost. To the end of the first fortnight in May, mild, with rain. To the end of August, rain and fair weather in pretty equal proportions. To the end of October, fine autumnal weather, with intervals of rain. To the 24th November frost. To December 16, mild dry foggy weather. To the end of the year frost and snow.

1781. To January 25, frost and snow. To the end of February, harsh and windy, with rain and snow. To April 5, cold drying winds. To the end of May, mild spring weather, with a few light showers.

X

June

162 SUMMARY OF THE WEATHER.

June began with heavy rain, but thence to the end of October, dry weather, with a few flying showers. To the end of the year, open weather with frequent rains.

1782. To February 4, open mild weather. To February 22, hard frost. To the end of March, cold blowing weather, with frost and snow and rain. To May 7, cold dark rains. To the end of May, mild, with incessant rains. To the end of June, warm and dry. To the end of August warm, with almost perpetual rains. The first fortnight in September mild and dry; thence to the end of the month, rain. To the end of October, mild with frequent showers. November began with hard frost, and continued throughout with alternate frost and thaw. The first part of December frosty; the latter part mild.

1783. To January 16, rainy with heavy winds.

SUMMARY OF THE WEATHER. 163

winds. To the 24th, hard frost. To the end of the first fortnight in February, blowing, with much rain. To the end of February, stormy dripping weather. To the 9th of May, cold harsh winds (thick ice on 5th of May). To the end of August, hot weather, with frequent showers. To the 23d September, mild, with heavy driving rains. To November 12, dry, mild weather. To the 18th December, grey soft weather, with a few showers. To the end of the year, hard frost.

1784. To February 19, hard frost, with two thaws; one the 14th January, the other 5th February. To February 28, mild wet fogs. To the 3d March, frost with ice. To March 10, fleet and snow. To April 2, snow and hard frost. To April 27, mild weather with much rain. To May 12, cold drying winds. To May 20, hot cloud-

164 SUMMARY OF THE WEATHER.

less weather. To June 27, warm with frequent showers. To July 18, hot and dry. To the end of August, warm with heavy rains. To November 6, clear mild autumnal weather, except a few days of rain at the latter end of September. To the end of the year, fog, rain, and hard frost (on December 10, the therm. 1 deg. below 0).

1785. A thaw began on the 2d January, and rainy weather with wind continued to January 28. To 15th March, very hard frost. To 21st March, mild with sprinkling showers. To April 7, hard frost. To May 17, mild windy weather, without a drop of rain. To the end of May, cold with a few showers. To June 9, mild weather, with frequent soft showers. To July 13, hot dry weather, with a few showery intervals. To July 22, heavy rain. To the end of September, warm with frequent

SUMMARY OF THE WEATHER. 165

quent showers. To the end of October, frequent rain. To 18th of November, dry, mild weather. (Hay-making finished November 9, and the wheat harvest November 14.) To December 23, rain. To the end of the year, hard frost.

1786. To the 7th January, frost and snow. To January 13, mild with much rain. To 21st January, deep snow. To February 11, mild with frequent rains. To 21st February, dry, with high winds. To 10th March, hard frost. To 13th April, wet, with intervals of frost. To the end of April, dry mild weather. On the 1st and 2d May, thick ice. To 10th May, heavy rain. To June 14, fine warm dry weather. From the 8th to the 11th July, heavy showers. To October 13, warm, with frequent showers. To October 19, ice. To October 24, mild pleasant weather.

166 SUMMARY OF THE WEATHER.

ther. To November 3, frost. To December 16, rain, with a few detached days of frost. To the end of the year, frost and snow.

1787. To January 24, dark, moist, mild weather. To January 28, frost and snow. To February 16, mild showery weather. To February 28, dry, cool weather. To March 10, stormy, with driving rain. To March 24, bright frosty weather. To the end of April, mild, with frequent rain. To May 22, fine bright weather. To the end of June, mostly warm, with frequent showers (on June 7, ice as thick as a crown piece). To the end of July, hot and sultry, with copious rain. To the end of September, hot dry weather, with occasional showers. To November 23, mild, with light frosts and rain. To the end of November, hard frost. To December

SUMMARY OF THE WEATHER. 167

ember 21, still and mild, with rain. To the end of the year, frost.

1788. To January 13, mild and wet. To January 18, frost. To the end of the month, dry windy weather. To the end of February, frosty, with frequent showers. To March 14, hard frost. To the end of March, dark, harsh weather, with frequent showers. To April 4, windy, with showers. To the end of May, bright, dry, warm weather, with a few occasional showers. From June 28 to July 17, heavy rains. To August 12, hot dry weather. To the end of September, alternate showers and sunshine. To November 22, dry cool weather. To the end of the year, hard frost.

1789. To January 13, hard frost. To the end of the month, mild, with showers. To the end of February, frequent rain, with snow-

168 SUMMARY OF THE WEATHER.

snow-showers and heavy gales of wind. To 13th March, hard frost, with snow. To April 18, heavy rain, with frost and snow and fleet. To the end of April, dark cold weather, with frequent rains. To June 9, warm spring weather, with brisk winds and frequent showers. From June 4, to the end of July, warm, with much rain. To August 29, hot, dry, sultry weather. To September 11, mild, with frequent showers. To the end of September, fine autumnal weather, with occasional showers. To November 17, heavy rain, with violent gales of wind. To December 18, mild dry weather, with a few showers. To the end of the year, rain and wind.

1790. To January 16, mild foggy weather, with occasional rains. To January 21, frost. To January 28, dark, with driving rains. To February 14, mild, dry weather.

To

SUMMARY OF THE WEATHER. 169

To February 22, hard frost. To April 5, bright cold weather, with a few showers. To April 15, dark and harsh, with a deep snow. To April 21, cold cloudy weather, with ice. To June 6, mild spring weather, with much rain. From July 3, to July 14, cool, with heavy rain. To the end of July, warm, dry weather. To August 6, cold, with wind and rain. To August 24, fine harvest weather. To September 5, strong gales, with driving showers. To November 26, mild autumnal weather, with frequent showers. To December 1, hard frost and snow. To the end of the year, rain and snow, and a few days of frost.

1791. To the end of January, mild, with heavy rains. To the end of February windy, with much rain and snow. From March to the end of June, mostly dry, especially June. March and April rather cold

Y

and

170 SUMMARY OF THE WEATHER.

and frosty. May and June, hot. July, rainy. Fine harvest weather, and pretty dry, to the end of September. Wet October, and cold towards the end. Very wet and stormy in November. Much frost in December.

1792. Some hard frost in January, but mostly wet and mild. February, some hard frost and a little snow. March, wet and cold. April, great storms on the 13th, then some very warm weather. May and June, cold and dry. July, wet and cool; indifferent harvest, rather late and wet. September, windy and wet. October, showery and mild. November, dry and fine. December, mild.

TABLE OF CONTENTS.

NATURALIST'S CALENDAR	—	Page 7
OBSERVATIONS ON BIRDS	— — —	57
Birds in general	— — —	ib.
Rooks	— — —	59
Thrushes	— — —	61
Poultry	— — —	62
Hen Partridge	— — —	64
Hybrid Pheasant (<i>with a coloured figure</i>)	—	65
Land Rail	— — —	67
Food of the Ring Dove	— —	69
Hen Harrier	— — —	70
Great speckled Diver, or Loon	— —	71
Stone Curlew	— — —	76
Smallest Willow Wren	— — —	77
Y 2		Fern

CONTENTS.

Fern Owl, or Goat Sucker	—	Page 77
Sand Martins	— —	83
Swallows, congregating, and disappearance of		86
Wagtails	— —	89
Wryneck	— —	90
Grosbeak	— —	90
OBSERVATIONS ON QUADRUPEDS		— 92
Sheep	— — —	ib.
Rabbits	— — —	93
Cat and Squirrels	— —	94
Horse	— —	95
Hounds	— —	ib.
OBSERVATIONS ON INSECTS AND VERMES		— 97
Insects in general	— —	ib.
Humming in the Air	— —	99
Chaffers	— — —	100
Ptinus Pectinicornis	— —	101
Blatta Orientalis.—Cockroach	—	102
Gryllus Domest.—House Cricket	—	105
Cimex Linearis	— —	106
Phalæna Quercus	— —	107
		Ephemera

CONTENTS.

Ephemera Cauda Bifeta.—May Fly	Page	108
Sphynx Ocellata — — —	—	ib.
Wild Bee — — —	—	109
Wasps — — —	—	110
Oestrus Curvicauda — — —	—	111
Nose Fly — — —	—	112
Bombylius Medius — — —	—	113
Muscae.—Flies — — —	—	114
Tipulæ, or Empedes — — —	—	116
Ants — — —	—	ib.
Glow Worms — — —	—	118
Earth Worms — — —	—	ib.
Snails and Slugs — — —	—	120
Snakes Slough — — —	—	121
 OBSERVATIONS ON VEGETABLES — —	 —	 124
Trees, Order of losing their Leaves	—	ib.
Size and Growth — — —	—	125
Flowing of Sap — — —	—	128
Ash Trees — — —	—	129
Sycamore — — —	—	ib.
Galls of Lombardy Poplar —	—	130
	Chestnut	

CONTENTS.

Chestnut Timber	—	—	—	Page 130
Lime Bloffoms	—		—	131
Black Thorn	—	—	—	132
Ivy Berries	—	—	—	ib.
Hops	—	—	—	133
Seed lying dormant		—	—	134
Beans sown by Birds		—	—	135
Cucumbers fet by Bees			—	136
Wheat	—	—	—	137
Truffles	—	—	—	ib.
Tremella Nofoc		—	—	138
Fairy Rings	—	—	—	139
METEOROLOGICAL OBSERVATIONS	—		—	140
Barometer	—	—	—	ib.
Partial Frost	—	—	—	ib.
Thaw	—	—	—	141
Frozen Sleet	—		—	142
Mift, called London Smoke			—	143
Reflection of Fog	—	—	—	ib.
Honey Dew	—	—	—	144
Morning Clouds	—		—	145
Dripping Weather after Drought		—	—	ib.
				Aurora

CONTENTS.

Aurora Borealis	— — —	Page 146
Black Spring, 1771	— — —	147
On the dark, still, dry, warm weather occasionally happening in the winter months (a Poem)		148
Measure of Rain in Inches and Hundreds	—	152
SUMMARY OF THE WEATHER	— —	153

THE END.

Published by the same Author,

In a Series of Letters to the Honourable Daines,
Barrington, and Thomas Pennant, Esq.

In one Volume Quarto, Price One Guinea in Boards,

THE
NATURAL HISTORY
AND
ANTIQUITIES
OF
SELBORNE,
IN THE
COUNTY OF SOUTHAMPTON.

With nine ENGRAVINGS and an APPENDIX.



THE
LIBRARY OF THE
MUSEUM OF NATURAL HISTORY

NEW YORK

1880

NO. 100

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880

1880